Beyond Migration:
Examining the Impact of Migration Experience, Gender, and Ethno-Caste Identity on Mental Health

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Abstract

What are the effects of migration on the mental health of migrants in Nepal? How does ethno-caste identity and gender moderate the association between migration and mental health? Taking an intersectional approach, this study examines the combined effects of migration experience, ethno-caste identity, and gender as a multidimensional social determinant of health. It leverages the Chitwan Valley Family Study, a comprehensive panel dataset, and event history analysis to address these questions in the context of Nepal. The case of Nepal is an important one for understanding the relationship between mental health and domestic and international migration. Migration in Nepal has become a major source of economic activity- leading to large segments of the population leaving to work abroad, returning home, and often, leaving again. This paper examines the interplay between migration, ethno-caste, and gender to influence mental health, thereby more carefully investigating the role social stigma, social status and migratory community histories have on mental health disorder diagnoses. The results indicate that international migration increases the likelihood of mental health disorders for females from lower ethno-caste categories compared to their upper-ethno-caste or male counterparts. However, for female international Brahmin/Chettri and Newari migrants, ethno-caste acts as a protective factor. Additionally, the probability of experiencing a mental health disorder either decreases or remains the same for most male migrants, except for Terai Janajati males, whose probability increases with each additional month away internationally. These findings indicate that gender relationships can vary within specific ethno-caste groups, highlighting the importance of investigating both inter- and intra-ethno-caste social mechanisms.

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Introduction

This study examines the relationship between migration experience and mental disorder, specifically focusing on how an individual's ethno-caste identity and gender shape this relationship. Although there is extensive documentation on the relationship between health disparities and individual factors such as race/ethnicity, immigration status, and gender, it remains unclear how these different factors of social stratification interact to influence mental health outcomes, especially in regions of the Global South (Virupaksha et al., 2014; Bhugra, 2003; Antia et al., 2020). Within the context of the United States, there is evidence that US-born white adults have better health when compared to US-born black and Mexican American adults (Reskin, 2012; Williams and Mohammed, 2013). While non-white immigrants to the US initially have better health than their American counterparts, this health advantage wears away over time because of the stress of racialized assimilation and acculturation (Brown, 2018; Anecol and Bedard 2006; Risomena et al., 2013; National Academies of Sciences, Engineering, and Medicine, 2015). When gender identity is added to the intersectional framework, research has found that exposure to genderism is associated with poor health outcomes, namely more chronic conditions and reduced physical functioning for women (Homan, 2019). Given that much of the existing research has been conducted within the context of the Global North, this paper seeks to explore whether similar trends can be observed within the Global South.

Extending this body of research, I examine if these intersections (ethno-caste identity, gender, and migration experience) influence the mental health outcomes of migrants in Nepal. While a large section of migration literature has focused on economic growth, there is some evidence that suggests that economic stressors, in combination with racial and gender discrimination, can lead to negative mental health outcomes (Virupaksha et al., 2014; Bhugra, 2003; Antia et al., 2020; Brown, 2018). Building upon this work, this study explores two research questions: What are the effects of migration on the mental health of migrants in Nepal? How do ethno-caste identity and gender moderate the association between migration and mental health?

In the last two decades, there has been a steady increase in international migration worldwide. In 2000, there were 173 million international migrants on the move. Two decades later, in 2020, that number increased to 281 million international migrants (IOM, 2020). While there is no data available on the number of internal migrants in 2000, in 2015, there were

approximately 740 million internal migrants on the move around the world (IOM, 2015; IOM, 2020). These upward trends in migration have paralleled in Nepal. In 2019, almost 50% of the country's households had a member who was either working overseas or had returned. In the same year, remittances contributed 25.5% of the country's gross domestic product (GDP) (Bajracharya, 2022; IOM 2020). This suggests that in Nepal, the effects of migration are large, at both, a micro- and macro-level. While for many, migration can provide greater economic and educational opportunities, the experience can also result in significant stressors. Migration can lead to separation from loved ones, experiences of discrimination, cultural dislocation, and in some situations, amplified or continued economic stress (Padilla et al., 1988; Bhugra 2004; Leon-Perez et al., 2021). These stressors can impact an individual's mental health and well-being. Moreover, systems of social stratification based on ethno-caste and gender continue to shape individuals' opportunities and experiences. In South Asia, ethno-caste and gender discrimination have been found to lead to poor mental health outcomes, particularly amongst minoritized groups such as members of the Dalit community and women (Thapa et al., 2021; Kiang et al., 2020).

This project examines the mental health consequences of immigration, which pertains to the diverse experiences individuals encounter upon reaching their migration destination. Immigrant experiences have been largely explained through contemporary theories such as assimilation, segmented assimilation, and transnationalism (Park, 1928; Gordon, 1964; Portes and Zhou, 1993; Portes and Rumbaut, 2001; Glick Schiller et al., 1995; Levitt & Glick Schiller, 2004). While these theories primarily aim to explain the processes of incorporation and integration, this study takes a broader perspective, aiming to explore the potential mental health ramifications of the immigrant experiences explained by these theories.

Given the ample evidence of how ethno-caste identity, migration experience, and gender can independently influence mental health, to obtain a more nuanced understanding of they might interdependently influence mental health, I use an intersectionality framework. Intersectionality is a theoretical framework that recognizes that individuals have multiple social identities which can lead to the overlapping of social oppression. More specifically, intersectionality considers how these forms of oppression are interconnected, noting that one identity cannot be understood in isolation from another (Crenshaw, 1989; Crenshaw, 1991; Collins and Bilge, 2020). For example, the intersectionality approach recognizes that ethnicity

and gender are not separate or additive dimensions of different systems of social stratification that can have impacts on health, but that they are mutually defining and reinforce each other (Mullings and Schulz, 2006). While many other studies have applied the intersectionality framework to study the effects of race/ethnicity and gender on health outcomes, they have largely been qualitative or applied to the context of the Global North (Mullings and Schulz, 2006; Gilborn, 2015; Brown, 2012; Warner and Brown, 2011). For this study, using the intersectionality framework would enable me to capture the complex and nuanced ways that ethno-caste identity and gender might interact with migration experience to influence mental health outcomes in the Global South using quantitative methodology. Doing so, the results suggest that migration generally improves mental health outcomes for many ethno-caste and gender identity combinations, contrary to the expectations based on the existing literature. The findings may enable more specific and targeted policy reforms to protect the mental health of migrants, particularly because of how much they contribute to the economy of Nepal, at a micro- and macro- level.

Setting

Migration in Nepal

Nepal has a long migration history. Migrants coming into the country have largely been Tibetan refugees (beginning 1959-1960) escaping from political instability, Nepali origin people from Burma who were forced to return after the Burmese Nationalization Act (1964), and approximately 10,0000 Bihari Muslims who fled from Bangladesh (1970s) because of safety concerns (Subedi, 1991). In the past, the pathways to leave Nepal have been through the British recruitment of Gurkha military fighters, the labor movement of low-wage workers to India, and marriage migration (Subedi, 1991; Graner 2001). This suggests that for some communities, there are long-established international connections and possible migration pathways.

Within the country, almost 90% of internal migrants moved from the northern hills to the southern terai region, where the soil was more fertile for agricultural pursuits (Subedi, 1991). More recently, migrants have begun to leave the country for higher-wage labor and better educational opportunities (Shrestha, 2017). This number has steadily increased in the last few decades. In 2011, there were 1,921,494 Nepali people living abroad (Central Bureau of Statistics, 2012). In 2021, this number has increased to 2,169,478 Nepali people living abroad. In 2021, in

the midst of the coronavirus pandemic, there were more than 240,000 labor visas granted for migrants to work internationally (Central Bureau of Statistics, 2023). This does not take into account migrants who went to work in India. Yet, a majority of the international migrants are male: approximately 95% of labor migrants are male (Rajbhandari, 2022).

Contemporarily, Nepali international migrants exhibit diverse migration destinations, encompassing the Middle East, India, the Persian Gulf, and select Western countries (Williams et al., 2020). Notably, the Middle East, particularly Malaysia, Qatar, Saudi Arabia, UAE, and Kuwait, holds significant appeal among these migrants (ILO, 2014). Ethno-caste categories play a role in determining migration patterns. Research by Williams et al. (2020) highlights that Dalits and indigenous Terai Janajati are more inclined to migrate to India and the Persian Gulf region due to the higher earning potential associated with these destinations, as compared to internal migration (Clewett, 2015). In contrast, members of the Brahmin-Chhetri group exhibit a stronger propensity for migrating to affluent Western and Asian countries (Williams et al., 2020). Importantly, Clewett (2015) estimates that a substantial number of Nepali migrants, approximately 1.5 million individuals, engage in regular, permit-free work in India by frequently crossing Nepal's porous border. This figure represents a significant portion of Nepal's total population of 27.8 million (Central Bureau of Statistics, 2023).

Internal migration in Nepal includes distinct patterns. Approximately 15% of the population resides outside their district of birth. In certain districts, more than 50% of migrants choose to relocate (Clewett, 2015). A majority of these migrants are hailing from the northern hills. For those who do not migrate abroad, the preferred destination is the southern terai region. While the country is currently going through a process of urbanization, about only 17% of the population lives in an urban environment (Clewett, 2015). However, over 60% of the population comes from a rural environment and a majority of the migrations are rural to rural movement (ILO, 2014). Moreover, a majority of the internal migration in Nepal involves a seasonal circulation pattern: households navigate between different geographic locations depending on seasonal fiscal opportunities.

International and internal migrants can experience difficulties during their immigration experience that may increase the likelihood of experiencing a mental health disorder (Vaidyanathan, 2022). International migrants may experience social isolation and alienation in host countries here they don’t speak the language or know the social norms (Gardner et al.,

2013). The longer their immigration journey, the more likely they will be to be incorporated into society, but initially, this may be an isolating experience. Additionally, many migrants, particularly labor migrants in the Middle East, endure difficult and often exploitative working conditions, including unsafe environments and long working hours. There are a significant amount of evidence indicative of Nepali migrants dying on the job because of harsh conditions in the Middle East, particularly for the construction of the World Cup stadium (Refugee and Migratory Movements Research Unit, 2014; Sedhai, 2014). Furthermore, evidence suggests that migrants may encounter financial difficulties such as delayed or unpaid wages. This impacts migrants' personal finances but also the remittance they are often expected to send back home, sometimes to pay back the loans they borrowed in order to migrate (Sedhai, 2014; Kovessy, 2015). Additionally, migrants often reside in poor quality accommodations shared with strangers, experiencing cramped and confined living spaces. Unsafe living conditions, including the risk of electrocution from water leakages, can further exacerbate their stress levels (Reber 2021; Pattisson and McIntyre, 2021).

Internal migrants encounter similar challenges, particularly in the context of rural-to-rural migration. One prominent difficulty is social isolation, as internal migrants find themselves in unfamiliar environments without an established community to rely on (Donini et al., 2013; Sharma, 2013; Monsutti, 2007). Engaging in cash-based opportunities, such as seasonal agriculture or employment in towns, can further contribute to social isolation due to the lack of a supportive community and the instability of employment. Moreover, internal migrants may experience discrimination, exemplified by documented cases of caste-based discrimination in renting rooms, particularly in urban areas like Kathmandu (Gellner and Ghimire, 2019; Subedi, 2021).

Unlike international migration, internal migration within Nepal does not afford individuals the ability to escape social stigmas associated with their home communities. The absence of a support system exacerbates the challenges faced by internal migrants. Furthermore, the instability of employment often leads to economic stress, as they struggle to secure stable income (Donini et al., 2013; Donini 2019). The various challenges faced by both international and internal migrants may lead to mental health issues, including the risk of suicide (Pattisson and McIntyre, 2021; Vaidyanathan, 2022).

Ethno-Caste Identity in Nepal

In contemporary discourse, the notion of ethno-caste has been subject to wide-ranging definitions and has been studied across diverse cultural contexts. Typically, it refers to a hierarchical social system founded upon ancestral lineage and birth (Wilkerson, 2020). In this paper, the term ethno-caste pertains specifically to the social stratification system that is dominant in South Asia. It is important to differentiate it from other forms of social stratification, such as class, by its entrenched and rigid nature that precludes mobility. Ethno-caste is inherited by birth and determined by familial lineage. One's ethno-caste dictates occupational opportunities, social associations, and financial well-being. A resilient system of social stratification, the ethno-caste maintains itself through birth and marriage (Giddens et al., 2018). The hierarchy of the ethno-caste system is legitimized through the recognition of and participation in the system by the general public (Ahuja and Ostermann, 2016).

Ethno-caste distinctions are perpetuated by social networks. The social capital theory suggests that resource distribution is tied to social networks and social membership (Bohra and Massey, 2009). As occupations are divided by ethno-caste categories, individuals are further able to maintain ethno-caste structures through the job market. This enables occupational legacies, financial structures, and thus, ethno-caste categorizations to perpetuate in a formal manner.

In Nepal, there are 126 ethnic linguistic groups (Williams et al., 2020). These ethnic groups with Indo-Aryan and Tibeto-Burmese origins are further categorized into distinct ethno-castes. In terms of progressive socio-economic disadvantages, Nepali ethno-caste hierarchies are the following: 1) Brahmin/Chhetri, 2) Newari/Hill Janajati, 3) Terai Janajati, and 4) Dalit (Bennet et al., 2008). These hierarchies are linked to occupational roles that then determine control over resources.

Brahmin and Chettri communities, categorized as "high ethno-caste Hindus", historically held positions in the government, as politicians, ambassadors, academics, religious leaders, and other privileged roles. The Newari people were traditionally involved in lower-tier politics, business, and trade. The Hill Janajati community traditionally hailed from the mountain region and some members of this ethno-caste category were professional combatants in the British Gorkha regiment. This history of international migration facilitated a pathway for certain *jatis* (sub-ethno-caste groups) within this ethno-caste category (Pariyar, 2019). The Terai Janajati

compromised of indigenous populations. They were residentially segregated from the ethno-caste categories listed above and relied heavily on their land for survival. The Dalit ethno-caste was historically known as “untouchables”. They were considered impure, excluded from religious practices, and limited in their interactions with members of other ethno-castes. Dalits were not supposed to enter the homes of those in higher ethno-castes, touch their food or water sources, or even look them in the eye (Williams et al., 2020). Linguistically and metaphorically, ethno-caste hierarchies are discussed (and thus, maintained) using language related to ‘purity’ and ‘contamination’ (Nightingale, 2011). This language has permeated social schemas to dictate the distribution of resources, generate associations of deservedness, and legitimize systematic oppression. This has extended to movement and migration: historically, Brahmin and Chettri's communities were able to travel extensively, particularly to wealthy geopolitical nation-states, whereas communities categorized in the other ethno-castes did not have the resources to travel, let alone migrate.

Gender Inequity in Nepal

Nepal's cultural fabric has long been rooted in patriarchal values. For a significant period, the country's legislation has upheld cultural practices that disempowered women (Laczo, 2003; Thapa, 2010). Until 2015, Nepali women were unable to obtain citizenship without the paper-trail approval of their fathers or husbands and were also unable to confer Nepali citizenship to their own children (Pradhan, 2020; Prasai, 2021). Gendered preferences by parents regarding educational expenditure have a historical precedence that favors males (Khanal, 2018; Stash and Hannum, 2001). Consequently, this has not only led to higher school enrollment among male children in general, but also greater investment in the quality of education they receive. Notably, a larger proportion of males attend private schools compared to their female counterparts (Khanal, 2018). These disparities have long-term implications for life outcomes. Despite recent advancements, the historical legacies of educational and opportunity disparities persist and continue to negatively impact low-ethno-caste women the most (Jacob, 2006; Agrawal, 2014). In recent years, the number of females attending school remains lower than males, while the dropout rate is higher among females (Dahal et al., 2022). The dropout rates among female students are further exacerbated during menstruation (Dahal et al., 2022; Oster and Thornton, 2009).

The limited access to education for females impacts their entire life trajectory. Surprisingly, over 56% of mothers in Nepal have not received any formal education, which has been found to have an impact on child health (Pandey et al., 2012). The majority of working women in Nepal are employed in the agricultural sector, where education certificates are not a requirement (Allendorf, 2017). In terms of professional opportunities, a significant wage gap exists, with women earning only 60% of what men earn in the formal sector (Sijapati et al., 2017). The inequalities of early education follow females their whole lives.

Gender disparity exists not only at the community level, cemented in legislation and everyday life, but also within the household. Gender equity is not only restricted by power dynamics between males and females but also between females. In Nepal, like in many South Asian countries, many families live in multi-generational households. Within these households, there is lots of evidence that suggests intergenerational power struggles between daughters-in-law and mothers-in-law in regard to shaping household dynamics (Allendorf, 2017; Bennett, 1983; Bennett, 1992; Kandiyoti, 1988; Minturn and Kapoor, 1993; Vera-Sanso, 1999). Given these complex interhousehold relationships compounded by community level gender discrimination, married women are found to experience greater rates of depression (Tsutsumi et al., 2008; Jack and Ali, 2010).

Scholars and activists have worked for decades to reduce gender disparities in the country. A primary method has been through economic development programs. Economic development programs and policies have promoted gender equity by expanding the opportunities available for women in the labor market (Buviniv and Furst-Nicholas, 2014). Such policies are created with the assumption that increased and independently earned income and wealth would increase the bargaining power of females as consumers outside of the household, and thereby possibly increase their bargaining power inside the home (Doss, 2013).

While migration has a history in Nepal, in the past, labor migration has been largely male dominated (Mishra, 2022; Kunwar, 2021; Rai, 2022). As men migrated, women within households and villages assumed additional work responsibilities (Pandey, 2019). This shift in labor distribution resulted in reduced food production and increased food insecurity. However, the economic impact was partially mitigated by remittances sent by male migrants, which helped compensate for the losses (Pandey, 2019).

Despite the male-dominated migration pattern, there has been a recent trend of increasing female participation in international migration. Since 2011, the percentage of female international migrants has witnessed a significant rise of 71% (Central Bureau of Statistics, 2023). However, it is important to note that women's migration continues to be constrained by various factors. Proposed legislation that requires explicit approval from their father, husband, or son, as well as the local municipality government office, limits women's ability to migrate independently and internationally (Shrestha and Taylor-Nicholson, 215; Rai, 2021; Mahaseth and Karki, 2021). These regulations further perpetuate women's financial dependence on males.

Mental Health in Nepal

The Nepali population has been subjected to multiple macro-level traumatic events, such as a decade-long civil unrest and multiple natural disasters, namely the catastrophic 7.9 magnitude earthquake in 2015. In conjunction with these macro-level effects, there are micro-level personal traumas that may be ongoing for some. However, as a result of limited resources, there has been a lack of adequate support and services available for citizens to help cope with the psychological impact of these traumatic events.

The initial assessment of population mental health in Nepal was conducted in 1984 in the capital, Kathmandu (Singh and Khadka, 2021; Gurung et al., 2017). Although not representative of the entire country, the results indicated that 14% of the population had a mental illness. In 2018, the National Mental Health Survey reported that 12.9% of the city’s population was clinically diagnosed with a mental health disorder (Jha et al., 2019). These figures are expected to be significantly higher when expanded to the national level. These data suggest that the widespread trauma experienced by the population can lead to the widespread experience of mental health disorders.

Among the mental health disorders that are prevalent in Nepal, anxiety, depression, and post-traumatic stress disorder (PTSD) are the most commonly observed. In 2016, the prevalence of anxiety was found to be 22.7% and the prevalence of depression was found to be 11.7% of the population (Risal et al., 2016). Furthermore, the median number of traumatic events experienced by Nepali citizens within a lifetime is two with natural disasters being the most common cause of trauma, affecting 84% of those who experienced trauma. In those with a history of trauma, PTSD

was found in 15% of the population, depression in 33% of the population, and anxiety in 38% of the population (Koirala et al., 2020).

There is a gendered difference in the experience of mental health disorders in Nepal. Studies have shown that the leading cause of death for women of reproductive age in Nepal is suicide; it has accounted for 16% of deaths (Subedi et al., 2015; Hagaman et al., 2017; Karki et al., 2017). Furthermore, research has indicated that 21% of suicides among women occur before the age of 18, which highlights the vulnerability of young Nepali women (Subedi et al., 2015).

While there is a need for mental health support, the country only has one public mental hospital with a total of 50 beds (Rai et al, 2021). To supplement this, medical colleges, general hospitals, and select private hospitals have created space for mental health patients (Jha et al., 2019; Upadhaya et al., 2014). Including these options, there are a total number of 500 beds for patients (Rai et al., 2021). The mental healthcare budget is less than 1% of the national health expenditure. This financing primarily goes to the public mental health hospital (Singh and Khadka, 2021).

Traditionally, the Nepali culture perceives the mind and body as two separate entities, with mental illness being viewed as indicative of a "weak" mind. Mental health issues are often attributed to black magic or karma from past lives and traditional healers are typically the first point of contact for those experiencing mental and emotional turbulence (Rai, 2001). Cultural values of prestige, privacy, and community perception can lead to stigma for those diagnosed with mental health disorders as being diagnosed indicates weakness of character (Gurung et al., 2022).

While there have been efforts to formulate general mental health policies in Nepal, the shortage of mental health providers, inadequate training of existing providers, and lack of resources have resulted in limited access to mental health care (Singh and Khadka, 2021). In this study, I focus on the experiences of depression, anxiety, and PTSD, considering specific gendered and ethno-caste experiences that may aid in developing targeted and nuanced mental health policies in Nepal.

Theoretical Framework

The social determinants of health framework examine how the circumstances in which people live and work shape their health and well-being (Marmont, 2005; Braveman et al., 2011).

To do this, it is important to consider an individual within a social gradient: low-status individuals have greater health risks and lower life expectancy than their higher-status counterparts (Marmont and Bell, 2016). Differences in social positions are shaped by the unequal distribution of resources, which can build over time and across generations (Marmont and Bell, 2009; Braveman et al., 2011).

In the context of Nepal, the historical legacies of class and gender have created deeply unequal realities today. Minoritized populations are most impacted by cumulative stress, leading to a decline in physical and mental health (Allen et al., 2014). Unemployment, precarious employment, or hostile interactions with employers lead to increases in psychological distress (Han and Lee, 2015; Reibling et al., 2017; Harringan and Koh, 2017). When combined with minoritized intersectional identities, the effects may amplify. The restrictive molds of these identities and their associations with the availability of resources could be a potential motive for migration, but these same intersecting disadvantages could lead to difficult migration experiences. Specifically, social identities may influence the decision to move, but they also impact the immigration experience itself. In this study, I focus on how the immigration experience in combination with gender and ethno-caste identity might impact mental health.

Migrant status, gender, and race/ethnicity have been well-established as social determinants of health in the literature (Davies et al., 2006). In this paper, I propose an intersectional approach to understanding the social determinants of health, specifically examining the interplay between migration experience, gender, and ethno-racial identity as key determinants of health outcomes. By considering these factors as interconnected and mutually reinforcing, it allows for a more comprehensive understanding of the complex ways in which social inequality impacts health disparities among marginalized populations.

Migration and Mental Health

Previous studies have established an association between migration experience and mental health (IOM, 2006; Castaneda et al., 2015; Ingleby, 2012; Salami et al., 2017). However, the exact nature of this relationship remains ambiguous. Some studies suggest that immigration can lead to improvements in mental health, particularly for women and those with poor mental health (Stillman et al., 2009; Kamperman et al., 2007). Yet, other studies highlight risks such as economic constraints, workplace conditions, precarious lifestyle habits, limited access to

healthcare and social exclusion that can lead to an increased susceptibility to developing depression and anxiety (Regmi et al., 2019; Haslam et al., 2005; Cheng and McCarthy, 2018; Breslau et al., 2011).

Labor migrants from the Global South are particularly susceptible to poor physical and mental health (Skeldon, 2017). In many cases, these migrants work in unskilled jobs that are associated with high-risk and often unsafe working conditions (Benach et al.,2011; Deshingkar, 2010; Moyce and Schenker, 2018; Yanar et al., 2018). These difficult and unsafe working conditions can lead to physical harm and occupational fatalities, leading to poor physical and mental health outcomes (Benach et al, 2011; Lay et al, 2017; Yanar et al, 2018; Zimmerman et al, 2011). In 2014, approximately 2.3 migrants were reported to have experienced occupational harm, with more than 6,000 deaths every day (ILO, 2015). Additionally, migrants often have limited access to health care facilities (Regmi et al., 2020). The combination of high levels of occupational harm and reduced access to health care can further deteriorate mental and physical health.

Migration into a new community is linked to cultural dislocation, the loss of cultural rootedness post-migration, which can cause stress and negatively impact mental health. Moving from one culture to another has been found to be very stressful (Bhugra and Jones, 2001). This experience can potentially increase the likelihood of experiencing a mental health disorder. Given the experience of cultural dislocation, migrants can have difficulty building a new community. This can lead to long periods of physical estrangement from family, a reduced sense of belonging, and unease in creating trust within the community. In turn, migrants have been found to experience increased social stress (World Health Organization, 2001; Bhugra and Jones, 2001). Migrants who experience these levels of reduced social support also experience increased risk of mental health disorders, as noted in the extant research (Brydsten et al., 2018; Salami et al., 2017; Turner and Brown, 2010; Leavy, 1983; Klinberg et al., 2006). More specifically, the lack of ethnic density and social isolation can negatively affect mental health (Bhugra and Jones, 2001). Overall, migration and the associated cultural dislocation can lead to reduced social support and increased stress that can negatively impact mental health.

On the other hand, migration can have positive effects on mental health. For example, migration can lead to improved economic status, which may reduce the likelihood of experiencing a mental health disorder. Increased economic status may also enable the migrant to

leave unhealthy working conditions or obtain mental health care if they do experience difficulties (Kirmayer et al., 2011). In the short term, migration can provide a sense of fulfillment for immigrants, as newfound wealth can enable them to support their family and extended family back home (Foliaki, 1997).

Additionally, migration can also enable individuals to shed social labels and categorizations and associated stigmas that were present in their home country, potentially leading to improved mental health outcomes (Stillman et al., 2009). For instance, Nepali migrants in low ethno-caste categories may be able to shed stigmas and discrimination associated with their ethno-caste (Gellner, 2007). By migrating to a new country, individuals have the opportunity to redefine their identity and social position, which may improve their mental health.

What's Ethno-caste Identity Got to Do With It?

The effect of migration on mental health can be moderated by ethno-caste identity. This begins during the emigration process: given the financial resources necessary to migrate, migrants from high-ethno-caste backgrounds are more likely to pursue migration to Western and Wealthy countries where the labor is less arduous while migrants from low-ethno-caste backgrounds are more likely to pursue migration to the Gulf and Middle East, where the labor demands are known to be particularly difficult. (Williams et al., 2020). These migration experiences can influence how an individual perceives their social status, experience of social stigma, and an individual's relationship with their land. In turn, a change in social status, social stigma, and a shift in an individual's relationship with land can impact mental health. For low-ethno-caste migrants, international migration provides an opportunity to shed their ethno-caste identity (Guru et al.,, 2009; Vartak and Tumbe, 2019; Deshingkar and Akter, 2009; Fan and Stark, 2011). Even if international migrants return, their migration experiences enable them to negotiate a 'higher' social status in the homeland (Jaspal et al., 2015; Ruiz et al., 2015; Lee et al., 2009, Adhikari and Hobley, 2013; Carswell and de Neve, 2014; Gidwani and Sivaramakrishnan, 2003; Ilahiane, 2001; Kurien, 2002; Osella and Osell,a 2000; Poertner et al., 2011; Sunam, 2014; Thieme and Wyss, 2005). Similar cases have been seen in India and Sri Lanka, in which minorities have used international migration to mobilize against their current social positions (Gidwani and Sivaramakrishanan, 2003; Osella and Oseela, 2000; Thangarajah, 2003). In Nepal, ethno-caste identity often imposes social restrictions and hinders the acquisition

of social status and capital (Kurien, 2002; Gellner, 2007). Therefore, despite facing immigrant stigma, international migration can enhance their social capital by alleviating the social constraints imposed by ethno-caste identity, such as limited job opportunities, restricted social networks, and barriers to education. The lower an individual's position in the caste hierarchy, the greater the potential for increased social status. This elevation in social status may influence mental health outcomes positively (Yu and Williams, 1999; Dohrenwend, 1992; Araya et al., 2003).

Conversely, for high-ethno-caste migrants, like for other higher social status categories, international migration may lead to a reduction in social status (Kupper et al., 2010; Engzell and Ichou, 2020). Particularly for ethno-caste categories like Brahmins/Chhetri, who occupy the top positions in Nepal's social hierarchy, assuming the identity of an "immigrant" abroad may diminish the benefits and privileges associated with their social capital, potentially limiting their access to resources. This decline in social status could contribute to heightened mental health challenges (Leu et al., 2008).

Internal migration, on the other hand, does not offer the opportunity to shed one's ethno-caste identity, and thus may not significantly impact mental health in this regard. Furthermore, low-caste migrants who participate in internal migration often participate in occupations that are physically taxing and stressful (Acharya, 2021; Chandrasekar and Ghosh, 2014; Chandrasekhar and Mitra; 2019). However, considering the lower social status experienced by individuals from lower-ethno-caste backgrounds, they may be more susceptible to experiencing mental health disorders compared to their higher-ethno-caste counterparts. Here is evidence that changes in social trust, or the lack thereof, of internal migrants affect their health (Lu et al., 2020).

Alongside social status, social stigma can impact low-ethno-caste migrants' mental health in a different way than high-ethno-caste migrants' mental health. There is significant evidence that suggests that experiencing discrimination negatively impacts mental health (Benoit et al, 2015; Berger and Sarnyai, 2015; Hynie, 2018; Hynie, 2018). International migration can have varying effects on social stigma or experience of discrimination depending on the ethno-caste categories of migrants. For individuals in low social identity categories, such as lower ethno-caste categories, migrating internationally offers the potential to reduce ethno-caste-associated social stigmas (Fan and Stark, 2011; Miech et al., 1999). Internationally, cultural connotations tied to last names and other indicators may not be associated with ethno-caste identity, thereby

removing these specific stigmas (Gellner, 1986). While they escape ethno-caste-based stigmas, migrants in low-ethno-caste categories may experience stigma associated with immigration which in turn, has been found to exacerbates ethnic health disparities (Morey, 2018). It is important to note that stigma associated with immigration can influence all migrants, regardless of ethno-caste identity. However, for low-ethno-caste migrants, even though the general social stigma of immigration may persist, the elimination of ethno-caste-specific stigmas such as occupational restrictions could contribute to improved mental health among low ethno-caste migrants.

On the other hand, high ethno-caste individuals who migrate internationally may encounter a new set of immigration-associated stigmas. This could be their first experience with social stratification-related discrimination (Li, 2016). In turn, this may have a negative impact on mental health as migrants navigate new and unfamiliar social dynamics (Lecerof et al., 2015; Drbohlav and Dzurova, 2017).

In the context of internal migration, the effects on social stigma differ. For lower ethno-caste individuals, internal migration does not alleviate the social stigmas related to ethno-caste identity. In fact, being in an unfamiliar environment may exacerbate these stigmas, as the local community lacks history with the individual (Sunam, 2014; Wang et al., 2010). This lack of familiarity can lead to increased distrust and hostility, particularly towards lower ethno-caste individuals, perpetuating social stigmatization, which in turn may lead to negative health consequences (Chen et al., 2011). For higher ethno-caste individuals undertaking internal migration, they do not lose their ethno-caste status and their recognized social status remains intact. This means that their influence and standing within the new environment does not significantly change, as there is a preexisting recognition of their higher caste status.

Certain ethno-castes in Nepal have a deep cultural connection to land, reflecting the significance of land stewardship within their traditions (Williams et al., 2020; Gellner, 2007). As a result, the experience of migration can have profound implications for these castes, as it challenges their cultural values and sense of belonging. For instance, the Newari people of Kathmandu exemplify this strong attachment to their physical surroundings, with a historical absence of significant migration patterns (Gellner and Quigley, 1995). In contrast, other ethno-castes, like the Hill Janajatis and Brahmin/Chhetris, have established migration pathways linked

to historical contexts, such as the Gurkha army or travel between the Hills and the Terai region (Williams et al, 2020; Gellner, 2007).

The cultural importance of land and the specific connections that ethno-caste categories hold to certain locations should be acknowledged when considering the impact of migration. For ethno-caste groups deeply rooted in land stewardship, the act of migration can disrupt their cultural values and sense of belonging, potentially leading to significant changes in their social dynamics and community cohesion. Understanding the intricate relationship between migration, cultural connections to land, and the experiences of different ethno-castes is crucial for recognizing the diverse impacts of migration within Nepal. These connections reveal valuable insights into the multifaceted experiences of ethno-castes and can develop more nuanced approaches to support their well-being and integration in the context of migration.

The Importance of Incorporating Gender

It is well documented that gender shapes migration patterns, reasons for migration, and experiences before, during, and after migration at the individual and household level (Boyd and Grieco, 2003; Pessar and Mahler, 2003; Unde and Ezzeddine, 2019). More specifically, the challenges that women face during the migration process, including adapting to a new social system, language, and culture, can have significant impacts on their mental health (Guruge and Collins, 2008). Women generally experience poorer health outcomes than men due to societal norms and inequalities in access to resources and opportunities (Afifi, 2007).

The experience of gender discrimination can persist for females even in the context of international migration, albeit in different forms from those in Nepal. The vulnerabilities associated with their immigrant status may amplify the effects of gender discrimination, limiting their access to resources and opportunities (Kelson and DeLaet, 1999). However, it is important to note that international migration can also serve as an escape from the gender discrimination prevalent in Nepal (Jolly et al., 2005; Fleury, 2016).

The process of international migration can have significant implications for gender roles, affecting both males and females in distinct ways. Males may encounter challenges as they navigate and adapt to new gender roles and expectations in the host country (Boyd and Grieco, 2014; Bemak and Chung, 2014). The shift in cultural contexts and social norms may require

them to adjust their understanding of masculinity and their roles within family and society (Boyd and Grieco, 2014).

On the other hand, females may experience increased autonomy and encounter gender roles that place less pressure on them compared to the traditional patriarchal norms prevalent in Nepal (Chatterjee and Desai, 2020; Fleury, 2016; De Jong and Graefe, 2008). International migration can provide an opportunity for women to break free from the constraints of Nepali patriarchal norms and explore new avenues for personal and social development. However, it is important to acknowledge that the specific location of migration can introduce different forms of gender roles, which may either represent an improvement or a further challenge for women, depending on the societal context and prevailing gender dynamics (Chatterjee and Desai, 2020; Mezzadra, 2010).

Internal migration within Nepal also has implications for gender roles, with distinct effects on men and women. Women who engage in internal migration are less likely to live in joint households compared to their non-migrant counterparts. This shift from a traditional joint family structure to more independent living arrangements may have positive effects on women's mental health, as it offers greater autonomy and freedom to make decisions about their lives (De Jong and Graefe, 2008). However, it is important to note that internal migration does not allow women to shed the patriarchal norms specific to Nepal. They may continue to face challenges associated with gender-based discrimination and limited social support networks in their new locations (Ranjan and Sumeetha, 2019; Pyakuryal et al., 2011). The absence of a strong community or family support system can adversely impact their mental health and well-being. Furthermore, prior research suggests that internal migration leads to substantial gender differences in earnings, with specifically negative effects on earning for women (Borman et al., 2011).

In contrast, men may experience certain benefits from the patriarchal values prevalent in Nepali society, even as they migrate internally. These values often grant them greater authority and decision-making power within their households and communities (Rajan and Sumeetha, 2019). However, men may also face the loss of social support networks that they had in their place of origin, which can have varying impacts on their mental health, potentially making them less vulnerable compared to women (Pyakuryal et al., 2011).

While international migration may offer women increased autonomy and expanded career prospects, the effects of internal migration on job opportunities for women within Nepal may be less pronounced. In the context of internal migration, women may be less likely to live in joint households compared to their male counterparts. This could potentially have positive implications for their mental health, as they may experience greater independence and autonomy in decision-making (Pyakurel et al., 2011). However, internal migration within Nepal may not necessarily lead to significant changes in gender roles or provide women with expanded professional opportunities.

Unlike international migration, internal migration within Nepal does not offer women the opportunity to shed the patriarchal norms specific to their country. They may still face social and cultural expectations that limit their access to education and professional advancement (Khanal, 2018; Stash and Hannum, 2001). Moreover, the lack of a supportive social network in the destination areas of internal migration can further reduce their access to social support systems, which can have implications for their mental health and overall well-being.

On the other hand, men may still benefit from patriarchal values and expectations, even as they experience the loss of social support networks due to migration. This can potentially result in a lesser impact on their overall well-being compared to women.

Hypotheses

In this paper, I claim that there the relationships between migration experience, ethno-caste identity, gender, and mental health. Building upon the theoretical framework above, in this section, I put fourth four hypotheses. For the hypotheses below, I categorize Brahmin/Chhetri and Newar as 'high' ethno-caste categories and Hill Janajati, Terai Janajati, and Dalits as 'low' ethno-caste categories based on their economic and social ethno-caste based privileges.

Hypothesis 1: International migration affects female migrants differently based on ethno-caste background. High ethno-caste females have higher mental health disorder risk while low ethno-caste females have lower risk during extended periods away.

Hypothesis 1 posits that high ethno-caste international female migrants may face unique challenges during migration that contribute to mental health disorders. While they leave behind gender discrimination specific to Nepal, they may still encounter gender bias in their new

context. Spending more time away from their home country can lead to a loss of social support and additional stressors related to acculturation, language barriers, and discrimination in the host country, increasing the likelihood of developing mental health disorders.

Conversely, Hypothesis 1 also posits that low ethno-caste international female migrants may experience improved mental health outcomes as they spend more time away from their home country. This hypothesis is supported by several factors. Low ethno-caste individuals in Nepal often face significant economic disadvantages that negatively affect their mental health. However, by migrating to other countries, they gain access to better economic opportunities, potentially enhancing their mental well-being. Additionally, low ethno-caste females in Nepal face discrimination based on gender and ethno-caste, which also impacts their mental health. Migrating to a new country may offer relief from these challenges, leading to improved mental health outcomes compared to those who remain in Nepal.

Hypothesis 2: *International migration affects male migrants differently based on ethno-caste background. High ethno-caste males have higher mental health disorder risk with longer stays abroad, while low ethno-caste males have lower risk during extended periods away.*

Hypothesis 2 suggests that low ethno-caste male international migrants may experience better mental health outcomes with more time spent away from their home country. When low ethno-caste males migrate to other countries, they not only gain access to better economic opportunities but also experience a shift in social status and a reduction in social stigma. This transition from their home country to a new environment allows them to escape the discrimination and social prejudices they may have faced based on their ethno-caste background. The decrease in social stigma and the improved social standing can positively influence their mental well-being.

Conversely, high-ethno-caste males may face a decrease in social status and an increase in social stigma when transitioning from a high-caste position in Nepal to becoming immigrants abroad. The shift from a privileged position to being perceived as immigrants can create a sense of social dislocation, marginalization, and loss of identity. This loss of social status and the experiences of social stigma can significantly impact their mental well-being, leading to increased vulnerability to mental health disorders. Moreover, high-ethno-caste individuals in

Nepal may have enjoyed certain privileges and advantages based on their ethno-caste background, which can be disrupted when they migrate to other countries. This disruption can trigger feelings of social exclusion and identity crisis, further contributing to mental health challenges.

Hypothesis 3: The longer domestic female migrants, regardless of ethno-caste background, stay away from home, the increase the likelihood of developing a mental health disorder.

Hypothesis 3 suggests that both high ethno-caste and low ethno-caste internal female migrants have a higher likelihood of developing a mental health disorder. However, low ethno-caste females are more susceptible to this risk compared to their high ethno-caste counterparts. Internal migration within Nepal brings about changes in gender roles, as women who engage in migration are less likely to live in joint households and experience a shift towards more independent living arrangements.

This transition can have positive implications for women's mental health, providing them with greater autonomy and decision-making power over their lives. However, it is important to acknowledge that internal migration does not eliminate the patriarchal norms and gender-based discrimination prevalent in Nepalese society. Female migrants, regardless of their ethno-caste background, may continue to face challenges associated with discrimination and limited social support networks in their new locations. For low ethno-caste women, the intersectionality of gender and caste discrimination compounds the risk to their mental health. The absence of a strong community or family support system, coupled with the additional burden of caste-based discrimination, further exacerbates their vulnerability.

Hypothesis 4: Domestic migration affects the mental health of male migrants based on their ethno-caste background. High ethno-caste males have a lower likelihood of mental health disorders, while low ethno-caste males have a higher likelihood of developing mental health disorders.

Hypothesis 3 suggests that domestic male migrants in Nepal, belonging to high ethno-ethno-caste backgrounds, experience a low likelihood of acquiring a mental health disorder. Historically, high ethno-ethno-caste males have enjoyed significant socio-economic advantages

and international networks, which could to the normalization of global migration. In turn, this could contribute to better mental well-being during migration. Additionally, they are less likely to face gender discrimination or ethno-caste-based stigma. This may further support positive mental health outcomes compared to other low ethno-caste individuals and their female counterparts.

On the other hand, low ethno-caste domestic male migrants in Nepal may be more susceptible to developing mental health disorders. Low-ethno-ethno-caste individuals often confront socio-economic disadvantages and ethno-ethno-caste discrimination within Nepal, which can hinder their overall well-being. Furthermore, the limited availability of social support networks while being away from their home community may further increase their risk of experiencing mental health issues.

Study Context: Chitwan Valley, Nepal

The data used in this study was collected in Chitwan, Nepal, a region that has experienced significant rural-to-urban migration. Chitwan is a region in the south-central part of Nepal and has a population of 719,859 people (Central Bureau of Statistics, 2022). The region is home to a mix of indigenous groups (including the Tharu people), domestic Nepali migrants, and international migrants from neighboring countries (Grimaldi, 2022; Williams et al., 2020; Rai, 2022). Chitwan is also a major agricultural hub, where farming is the primary source of livelihood for many people.

In recent years, Chitwan Valley has experienced a number of natural disasters and other traumatic events, including flooding, landslides, and the 2015 earthquake that devastated much of Nepal. These events, coupled with the region's limited resources have had a significant impact on the mental health of the local population (Luitel et al., 2017). As a result, there is a growing need for mental health services and support in the region.

Data and Methods

For this paper, I use the Chitwan Valley Family Study (CVFS) data housed at the University of Michigan's Institute for Social Research. CVFS is a longitudinal panel study that samples 151 Western Chitwan, Nepal neighborhoods. The data was first collected in 1997 and has followed the same individuals (with additions of individuals that the sampled individuals

marry or give birth to) for over 25 years. As of 2021, there is a response rate of 97%. Within the CVFS, there are multiple datasets. These datasets provide data at the individual, household, and community level. For this study, I create a dataset by merging variables from the Household Registry Survey, the Agriculture and Consumption Survey, and the Composite International Diagnostic Interview (CIDI) from the World Mental Health Survey (Axinn et al., 2018; Ghimire et al., 2018).

Sample Design

The Household Registry Survey collects monthly individual level data via interviews with a household member. The variables used from this dataset include monthly migration data, demographic information, education level data, information about physical health, and an individual's marriage status.

The Agriculture and Consumption Survey, a cross-sectional survey conducted in 2006, includes household-level data such as household income, land ownership, and savings information. While the economic information obtained from the Agriculture and Consumption Survey is not as granular as that of the Household Registry Survey, it is an indication of the household's economic status, which seldom dramatically changes within a decade. Given the data that is available, and that Nepalese people tend to live in multi-generational households and share economic resources within these households, it is a useful proxy.

The World Mental Health Survey's Composite International Diagnostic Interview (CIDI) is a validated diagnostic interview administered by lay interviewers using computer-assisted methods. Conducted between 2016 and 2018, this dataset includes diagnoses of seven mental health disorders. This data includes diagnosis of mental health disorders from the individual's time of birth to the time of interview. While the data is collected retrospectively, the life history calendars are used to jog participants' memories about the timing of specific events. Using a sub-sample of the CSDE sample (which enables me to merge the data at an individual level), this data is translated and validated in Nepali. For validation, the CIDI team reinterviewed a sample of respondents who were diagnosed with a mental health disorder through CIDI-generated diagnosis and a sample of respondents who were not diagnosed with any mental health disorder. These individuals were reinterviewed in a clinical setting by a psychiatrist using the Nepali translation of the Structured Clinical Interview Diagnosis. The validation process is in high

concordance with studies in the United States and within European countries, when compared to the Structured Clinical Interview of DSM-IV (SCID-IV), the gold standard of interview diagnosis (Ghimire et al, 2013; Axinn et al, 2013).

To create an individual-level dataset, the Household Registry Survey data was merged with the CIDI data, using data from January 2009 to December 2016. This data includes all individuals aged 15 or above. The household-level data available in the Agriculture and Consumption Survey are merged at the household level. This ensures that if two individuals in the dataset are from the same household, their economic status information will be the same. Additionally, given the evidence of high levels of gender inequality in Nepal, particularly regarding the decision and ability to migrate, I create two new datasets, separated by gender (International Labor Organization, 2015; Sijapati et al, 2019). As the available data is binary, in this paper, I consider gender to be an approximate proxy for gender, recognizing that the two cannot be conflated (Deaux, 1985; Delphy, 1993). In this paper, I will use the term, "gender" to describe the binary data, acknowledging that in the data provided in the survey is self-identified gender.

Measures

Outcome Measure

Mental Health Disorders. This study measures the experience of a mental health disorder as a dichotomous variable. Using the Nepali translation of the WMH CIDI 3.0 data, this is defined as the diagnosis of depression, anxiety, and post-traumatic stress disorder (PTSD) each year. If the respondent was diagnosed by the CIDI as having any one of those disorders each year, it was coded as '1'. Otherwise, it was coded as a '0'.

Explanatory Measure

Migration Experiences. In this study, the migration variable is the explanatory variable. In creating this variable, I attempt to capture both, distance and time away from home. To do this, I measure the distance away from home in a dichotomous way: each migration experience is categorized as domestic migration or international migration. Domestic migration captures the mobility of migrants who leave the Chitwan Valley but remain within the nation-state boundary

of Nepal. International migration captures the mobility of migrants who leave the nation-state boundary of Nepal. Time away from home is measured as the number of months ever away from Chitwan. Combining these two ways of measuring migration, I create two migration variables: the first measures the total number of months a migrant is ever away domestically and the second measures the total number of months a migrant is ever away internationally.

Moderating Measures

Ethno-caste Identity. In this study, I suggest that ethno-caste identity is a moderating factor between migration experience and mental health outcomes. Ethno-caste is measured in two ways: respondents were asked, "What is your ethnicity?" and "What is your father's ethno-caste?". Given that ethno-caste is paternally inherited, I used the second question to verify the results of the first question. The measures of both questions had five categories coded as (1) Brahmin/Chhetri, (2) Hill Janajati, (3) Dalit, (4) Newar, (5) Terai Janajati, and (6) Other. Given that there are 256 different ethno-caste categories in Nepal, I regrouped them in a way that ensures that each category has a robust sample size. Furthermore, they still align with historical avenues of power and privilege. Williams et al. categorize ethno-caste in similar ways (Williams et al., 2020).

Gender Identity

Gender. In this study, I suggest that gender is a moderating factor between migration experience and mental health outcome. Gender is coded as a binary variable (1 = Female, 0 = Male).

Controls

The models controls for age, marital status, economic status, physical health, and education. Age is included as a continuous variable ranging from 15 to 59. Education is defined as years of formal education. Education is categorized as (1) no formal education, (2) any primary education, (3) any upper primary education (6-8 years of education), (4) any secondary, (5) any higher secondary, (6) bachelor's degree or equivalent, (7) master's degree or equivalent, (8) doctorate degree or equivalent. These categories align with Nepal's education system (Stash

and Hannum, 2001; Chapman & Dhungana, 1991). Close social support is operationalized using marriage status as a proxy. Marriage status is measured by three categories: (1) currently married, (2) previously married, and (3) never married. Physical health is categorized as (1) excellent, (2) very good, (3) good, (4) fair, and (5) poor.

Economic status is operationalized in three ways: household savings, household land ownership, and household income. Respondents were asked, "Do you have any savings in banks or other financial institutions?" Thus, the savings measure is characterized as a binary: No (0) and Yes (1). Landownership is included as a continuous variable measured in the Katta units (1 Kattha is equal to 182.25 square feet) of land owned by the household. In the survey, total household income was defined as: "Income from all sources, including wages, salaries, pensions, income from selling crops, animals or goods, income from renting houses, land or equipment, businesses income or income from gifts or other payments in the last year" (Axinn et al., 2018). Using this definition, household income was categorized as: <= 10,000 rupees per year, <= 25,000 rupees per year, <= 50,000 rupees per year, <= 100,000 rupees per year, <= 250,000 rupees per year, and <= 500,000 rupees per year.

Event History Analysis and Logistic Regression

To understand the relationship between migration experience, gender, ethno-caste identity, and mental health, I use event history analysis in conjunction with logistic regression. Event history analysis is a statistical method used to analyze time-to-event data (Mills, 2010). This study looks at the time of the first mental health disorder diagnosis. Migration is a time-varying exposure: one can be exposed to migration for different lengths of time, multiple times, and to multiple destinations. Event history analysis enables the estimation of the association between migration and mental health status while accounting for the time and duration of the migration exposure. Furthermore, event history analysis enables the inclusion of time-dependent covariates such as education, age, and marriage status. This supports a greater understanding of the mechanisms. Given that logistic regression can be used to model the association between migration experience and mental health diagnosis (which is a binary outcome), while controlling for potential confounding factors, using that in conjunction with event history analysis can

provide a more complete and nuanced understanding of the relationship between migration and mental health.

Results

In this study, I use three different datasets. Dataset 1 [called the full sample] has a sample size of 6,536 and it includes both, males and females. Dataset 2 [called the male sample] has a sample size of 3,191 individuals and it includes only males. Dataset 3 [called the female sample] has a sample size of 3,345 and includes only females.

Descriptive Statistics

As evident in Table 1, the percentage of international migrants was higher in the male sample (45.31%) compared to the full sample (27.92%) and the female sample (11.33%), which is consistent with previous research indicating a greater prevalence of male migrants in the region (Williams 2009; Massey et al. 2010). The percentage of domestic migrants was similar across all three datasets: The full sample included 29.13% domestic migrants while domestic migrants made up 30.1% of male sample and 28.79% of female sample. Females were found to have a higher rate of mental health disorders, with 14.78% (female sample) diagnosed with a mental health disorder compared to 4.45% of males (male sample). When both males and females were considered, the overall rate of mental health disorders was 29.13% (full sample).

All three datasets had a similar representation of different ethno-caste categories. The Brahmin/Chhetri ethno-caste category had the highest representation in all three datasets, with female sample having the highest percentage (44.36%), followed by full sample (43.4%) and male sample (42.9%). The Newar ethno-caste category had a similar representation across all three datasets, with percentages ranging from 5.83% in female sample to 5.95% in male sample. The Hill Janajati ethno-caste category had a similar representation in the full sample and the male sample (16.43% and 16.79%, respectively) but a slightly lower representation in the female sample (16.08%). The Terai Janajati ethno-caste category had the highest representation in the female sample (22.27%), followed by male sample (21.3%) and the full sample (21.8%). The Dalits ethno-caste category had a similar representation across all three datasets, with percentages ranging from 11.44% in the female sample to 12.2% in the full sample. Overall, the

ethno-caste categories were evenly represented across the three datasets, with only minor variations in their percentage.

Logistic Regression Results

In this section, I will present the results of the logistic regression models (Table 2). In the next section, I will use predicted probability models to further contextualize the findings. Table 2 presents the results of six logistic regression models, consisting of three zero-order models and three higher-order models. Each of the three datasets mentioned earlier corresponds to a zero-order model and a higher-order model. Dataset 1, includes both males and females, was utilized to fit a zero-order model (Model 1a) and a higher-order model (Model 2a). Dataset 2, comprising of only males, was used to establish a zero-order model (Model 2a) and a higher-order model (Model 2b). Dataset 3, comprising of only females, served as the basis for a zero-order model (Model 3a) and a higher-order model (Model 3b).

The results of the zero-order model, which includes both males and females (Model 1a in Table 2), indicate a decrease in the odds of developing a mental health disorder for each month that a domestic migrant is away from home, by a factor of 0.998. It is significant at 0, indicating a strong correlation between time spent away from home and a lower risk of mental health disorders among domestic migrants, regardless of their ethno-caste identity and gender. These findings suggest that extended periods of migration may have a protective effect on the mental health of domestic migrants. When analyzing only male participants in the zero-order model (Model 2a in Table 2), the odds of developing a mental health disorder decrease by a factor of 0.987 for each month spent away from home. This result is statistically significant at a p-value of less than 0.05. Conversely, for female participants in the zero-order model (Model 3a in Table 2), the odds of developing a mental health disorder increase by a factor of 1.0006 for each month spent away from home, but this result is not statistically significant. Overall, these results indicate that the relationship between time spent away from home and mental health outcomes among domestic migrants may differ between genders. Furthermore, the results suggest the importance of examining males and females independently, given that the male-only results largely influence the ‘no results’. This exemplifies the usefulness of an intersectional framework in showing these gendered differences.

When looking at international migration, the results of the zero-order model that includes both genders (Model1a in Table 2), it is evident that for each additional month, an international migrant is away from home, the odds of developing a mental health disorder decreases by 0.998. This is significant at 0. The results of the only male zero-order model (Model 2a in Table 2) suggest that for each additional month, an international male migrant is away from home, the odds of developing a mental health disorder decrease by 0.995, significant at 0. The results of the only female zero-order model (Model 3a in Table 2) suggest that for each additional month, an international male migrant is away from home, the odds of developing a mental health disorder decreases by 0.997, significant at 0. The protective effect of extended periods of international migration on mental health appears to be consistent regardless of ethno-caste identity or gender.

The results from Model 1a in Table 2 indicate that when the sample is not separated by gender, there is a strong association between ethno-caste identity and mental health outcomes. When looking at the results that only look at ethno-caste identity and mental health outcomes (i.e. direct effects and not interactions), Brahmin/Chettri individuals have decreased odds of developing a mental health disorder each year by a factor of 0.587 compared to their Dalit counterparts. Conversely, Newari individuals have increased odds of developing a mental health disorder each year by a factor of 1.038 compared to Dalit individuals, although this finding is not significant. In addition, Hill Janajati and Terai Janajati individuals have decreased odds of developing a mental health disorder each year by factors of 0.549 and 0.475, respectively, when compared to their Dalit counterparts, both of which are significant at the 0 levels.

Moreover, Model 2a in Table 2 shows that when only males are included in the sample, there is a strong association between ethno-caste identity and mental health outcomes. Brahmin/Chettri males have decreased odds of developing a mental health disorder each year by a factor of 0.592 compared to their Dalit counterparts, whereas Newari males have increased odds of developing a mental health disorder each year by a factor of 1.284 compared to Dalit females. Furthermore, Hill Janajati and Terai Janajati males have decreased odds of developing a mental health disorder each year by factors of 0.668 and 0.478, respectively, when compared to their Dalit counterparts, both of which are significant at the 0 levels.

Finally, Model 3a in Table 2 indicates that when only females are included in the sample, there is also a strong association between ethno-caste identity and mental health outcomes. Brahmin/Chettri females have decreased odds of developing a mental health disorder each year

by a factor of 0.545 compared to their Dalit counterparts. On the other hand, Hill Janajati and Terai Janajati females have decreased odds of developing a mental health disorder each year by factors of 0.505 and 0.477, respectively, when compared to their Dalit counterparts. Notably, the odds of developing a mental health disorder each year for Newari females compared to Dalit females are not significant. The direct effects analysis establishes the links between migration status, gender, and mental health. However, to examine the combined impact of ethno-caste identity, gender, and migration status on mental health, we need to explore the higher-order models. These models allow us to better understand how these factors interact with each other and contribute to mental health outcomes.

The results from Model 1b in Table 2 indicate a strong relationship between ethno-caste identity and the odds of experiencing a mental health disorder for domestic migrants when gender is not taken into account. Specifically, the odds of experiencing a mental health disorder decrease by a factor of 0.998 for every month a domestic migrant is away from home if they are part of the Brahmin/Chettri ethno-caste category ($p < 0.001$) and the Newari ethno-caste category. These are both significant at 0.001. Conversely, for domestic migrants from the Hill Janajati ethno-caste category, the odds of experiencing a mental health disorder increase by a factor of 1.004 for every month they are away from home, significant at 0.001. For those from the Terai Janajati ethno-caste category, the odds of experiencing a mental health disorder decrease by a factor of 0.994 for every month they are away from home, significant at 0.01. Additionally, for domestic migrants from the Dalit ethno-caste category, the odds of

Table 1: Descriptive Statistics

	Dataset 1: Full Sample [Includes Males and Females]	**Dataset 2: Male Sample [Includes Only Males]**	**Dataset 3: Female Sample [Includes Only Females]**
Sample (N=)	6536	3191	3345
International Migrants	1825 (27.92%)	1446 (45.31%)	379 (11.33%)
Domestic Migrants	1922 (29.13%)	959 (30.1%)	963 (28.79%)
Mental Health Disorders	633 (9.78%)	142 (4.45%)	491 (14.78%)
Ethno-caste			
Brahmin/Chhetri	2853 (43.65%)	1369 (42.9%)	1484 (44.36%)
Newar	385 (5.89%)	190 (5.95%)	195 (5.83%)
Hill Janajati	1074 (16.43%)	536 (16.79%)	538 (16.08%)
Terai Janajati	1425 (21.8%)	680 (21.3%)	745 (22.27%)
Dalit	799 (12.22%)	416 (13.03%)	383 (11.44%)

Table 2: Logistic Regression Results

Covariates	Model1a: Zero-Order Model, Males and Females	Model 1b: Higher-Order Model, Males and Females	Model 2a: Zero-Order Model, Only Males	Model 2b: Higher-Order Model, Only Males	Model 3a: Zero-Order Model, Only Females	Model 3b: Higher-Order Model, Only Females
Domestic Migration x Brahmin/Chettri	---	0.998*** (0.0015)	---	0.981 (0.004)	---	1.0009*** (0.0028)
Domestic Migration x Newar	---	0.998*** (0.0018)	---	0.990*** (0.004)	---	0.996 (0.002)
Domestic Migration x Hill Janajati	---	1.004*** (0.0017)	---	0.987 (0.004)	---	1.007*** (0.002)
Domestic Migration x Tarai Janajati	---	0.994* (0.002)	---	0.993** (0.004)	---	0.98 (0.002)
Domestic Migration x Dalit	---	0.990*** (0.0013)	---	0.98123*** (0.003)	---	0.995** (0.002)
International Migration x Brahmin/Cheetri	---	1.012*** (0.0014)	---	1.003*** (0.002)	---	0.980*** (0.003)
International Migration x Newar	---	0.990** (0.0022)	---	0.999** (0.003)	---	0.870*** (0.023)
International Migration x Hill Janajati	---	1.003. (0.0014)	---	1.003 (0.002)	---	0.98 (0.002)
International Migration x Terai Janajati	---	1.005*** (0.0015)	---	1.001* (0.002)	---	.021*** (0.003)
International Migration x Dalit	---	1.002 (0.001)	---	0.995 (0.002)	---	1.010*** (0.002)
Domestic Migration	0.998*** (0.0005)	0.990*** (0.0013)	0.987*** (0.001)	0.981*** (0.003)	1.0006 (0.0004)	0.995** (0.002)

International Migration	0.998*** (0.0006)	1.0006 (0.001)	0.995*** (0.001)	0.996** (0.002)	0.997** (0.0009)	1.010*** (0.002)
Ethno-caste [Ref: Dalit]						
Brahmin/Chhetri	0.587*** (0.0287)	0.596*** (0.032)	0.592*** (0.064)	0.668*** (0.081)	0.545*** (0.033)	0.562*** (0.036)
Newar	1.038 (0.039)	1.021 (0.046)	1.284** (0.083)	0.998 (0.113)	0.936 (0.046)	1.079 (0.050)
Hill Janajati	0.549*** (0.034)	0.479*** (0.039)	0.668*** (0.068)	0.628*** (0.093)	0.505*** (0.039)	0.455*** (0.044)
Terai Janajati	0.475*** (0.032)	0.450*** (0.036)	0.478*** (0.069)	0.413*** (0.091)	0.477*** (0.037)	0.475*** (0.039)
Age	1.015*** (0.001)	1.015*** (0.001)	1.00003 (0.002)	0.9999 (0.002)	1.023*** (0.0014)	1.024*** (0.001)
Gender [Ref: Female]						
Male	3.487*** (0.027)	0.283*** (0.028)	---	---	---	---
Marriage Status [Ref: Never Married]						
Currently Married	1.522*** (0.035)	1.542*** (0.035)	1.475*** (0.068)	1.481*** (0.068)	1.796*** (0.044)	1.824*** (0.044)
Was Married	4.620*** (0.049)	4.619*** (0.049)	5.617*** (0.102)	5.682*** (0.103)	4.939*** (0.059)	4.899*** (0.059)
Physical Health [Ref: Poor]						
Excellent	0.528*** (0.080)	0.537*** (0.081)	0.120*** (0.218)	0.126*** (0.218)	0.897 (0.089)	0.900 (0.089)
Very Good	0.484*** (0.077)	0.466*** (0.077)	0.435*** (0.151)	0.457*** (0.152)	0.535 (0.095)	0.487*** (0.096)
Good	0.416*** (0.055)	0.410*** (0.055)	0.363*** (0.130)	0.378*** (0.130)	0.443*** (0.062)	0.435*** (0.062)

Fair	0.693*** (0.055)	0.681*** (0.055)	0.792. (0.131)	0.816 (0.131)	0.675*** (0.060)	0.663*** (0.061)
Education [Ref: No Formal Education]						
Any Primary	0.908** (0.032)	0.890*** (0.032)	1.263* (0.113)	1.226. (0.114)	1.088* (0.035)	1.076* (0.035)
Any Upper Primary	1.105** (0.033)	1.113** (0.033)	2.990*** (0.112)	2.930*** (0.112)	1.113** (0.037)	1.147*** (0.038)
Any Secondary	0.571*** (0.037)	0.577*** (0.037)	1.827*** (0.114)	1.786*** (0.114)	0.554*** (0.043)	0.581*** (0.043)
Any Higher Secondary	0.517*** (0.046)	0.528*** (0.046)	1.701*** (0.129)	1.618*** (0.129)	0.547*** (0.053)	0.580*** (0.053)
BA or Equivalent or Beyond	0.803*** (0.051)	0.835*** (0.051)	1.926*** (0.142)	1.828*** (0.141)	0.923 (0.058)	1.046 (0.058)
Savings [Ref: No]						
Yes	1.252*** (0.022)	1.255*** (0.022)	1.700*** (0.048)	1.676*** (0.048)	1.161*** (0.025)	1.169*** (0.026)
Income [Ref: <= Rs 10,000]						
<= Rs 25,000	0.974 (0.035)	0.956 (0.035)	1.742*** (0.070)	1.794*** (0.071)	0.783*** (0.042)	0.775*** (0.042)
<= Rs 50,000	1.105*** (0.030)	0.820*** (0.031)	1.064 (0.067)	1.087 (0.068)	0.758*** (0.035)	0.765*** (0.035)
<= Rs 100,000	0.803*** (0.031)	0.860*** (0.031)	0.691*** (0.072)	0.716*** (0.073)	0.891*** (0.035)	0.883*** (0.035)
<= Rs 250,000	0.899** (0.035)	0.896** (0.035)	0.615*** (0.086)	0.630*** (0.086)	0.933. (0.039)	0.940 (0.039)
Landownership	1.010*** (0.002)	1.009*** (0.002)	0.985*** (0.004)	0.985*** (0.004)	1.016*** (0.002)	1.016*** (0.002)
BIC	101236.9	101072.7	25011.2	26038.37	74191.55	73843.75

All numbers are in Odds Ratios.
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

experiencing a mental health disorder decrease by a factor of 0.990 for every additional month away from home, significant at 0.001.

Model 1b in Table 2 also demonstrates that for international migrants, the odds of experiencing a mental health disorder increases by a factor of 1.012 for every month they are away from home, given their Brahmin/Chettri affiliation. This effect is significant at 0. Conversely, for those from the Newari community, the odds of experiencing a mental health disorder decrease by a factor of 0.990 for every month away from home, and this effect is significant at 0.001. For Hill Janajati international migrants, the odds of experiencing a mental health disorder increase by a factor of 1.003 for every month away from home, and this effect is significant at 0.01. Those from the Terai Janajati community have an odds ratio of 1.005 for experiencing a mental health disorder every month away from home, and this effect is significant at 0. For international migrants from the Dalit community the odds of experiencing a mental health disorder increase by a factor of 1.002 for every additional month away from home, but this effect is not significant.

The results from Model 2b in Table 2 suggest that among males, the impact of ethno-caste identity on mental health varies with the duration of domestic migration. Specifically, for every month a Brahmin/Chettri migrant is away from home, the odds of experiencing a mental health disorder decreases by a factor of 0.981, but this relationship is not significant. In contrast, for every month a domestic migrant belonging to the Newari community is away from home, the odds of experiencing a mental health disorder decrease by a factor of 0.990, and this relationship is significant at 0. Similarly, for every month a Terai Janajati domestic migrant is away from home, the odds of experiencing a mental health disorder decrease by a factor of 0.993, and this relationship is significant at 0.001. However, for domestic migrants belonging to the Hill Janajati ethno-caste community, there is no significant relationship between the duration of migration and mental health. Lastly, for every additional month, a domestic migrant belonging to the Dalit community is away from home, the odds of experiencing a mental health disorder decrease by a factor of 0.981, and this relationship is significant at 0.

In Model 2a of Table 2, it was found that for every month an international migrant is away from home, the odds of experiencing a mental health disorder increase by a factor of 1.013, but this effect is not significant for those belonging to the Brahmin/Chettri ethno-caste category. However, for those belonging to the Newari community, the odds of experiencing a mental

health disorder decrease by a factor of 0.999, which is significant at 0.001. For those belonging to the Hill Janajati community, the odds of experiencing a mental health disorder increase by a factor of 1.003, but this effect is not significant. For those belonging to the Terai Janajati community, the odds of experiencing a mental health disorder increase by a factor of 1.005, which is significant at 0. For every additional month, an international migrant is away from home, the odds of experiencing a mental health disorder increase by a factor of 1.001 for those belonging to the Dalit community, which is significant at 0.01.

The results from Model 3b in Table 2 indicate that when the sample only includes females, the odds of experiencing a mental health disorder increase by a factor of 1.0009 for every month a domestic migrant is away from home, given that they belong to the Brahmin/Chettri community. This is significant at 0. However, for every month a Newari domestic migrant is away from home, the odds of experiencing a mental health disorder decrease by a factor of 0.999, which is not significant. For each month a Hill Janajati domestic migrant is away from home, there is an increase in the odds of experiencing a mental health disorder by a factor of 1.007, which is significant at 0. On the other hand, every month a Terai Janajati domestic migrant is away from home there is a decrease in the odds of experiencing a mental health disorder by a factor of 0.980, but this is not significant. Additionally, for every additional month, a domestic migrant is away from home and belongs to the Dalit community, the odds of experiencing a mental health disorder decrease by a factor of 0.995, which is significant at 0.001.

For female international migrants, the results from Model 4b in Table B indicate that the odds of experiencing a mental health disorder decreases by a factor of 0.980 for every month they are away from home if they are a part of the Brahmin/Chettri community. Conversely, the odds of experiencing a mental health disorder decrease by a factor of 0.870 for every month away from home if they are Newari, which is also significant at 0. Additionally, for female international migrants who are from the Hill Janajati community, the odds of experiencing a mental health disorder decrease by a factor of 0.980 for every month they are away from home, but this is not significant. In contrast, if they are from the Terai Janajati community, the odds of experiencing a mental health disorder decrease by a factor of 0.21 for every month away from home, which is significant at 0. Furthermore, for every additional month a female international migrant is away from home, the odds of experiencing a mental health disorder increase by a factor of 1.010 if they are from the Dalit community, which is significant at 0.

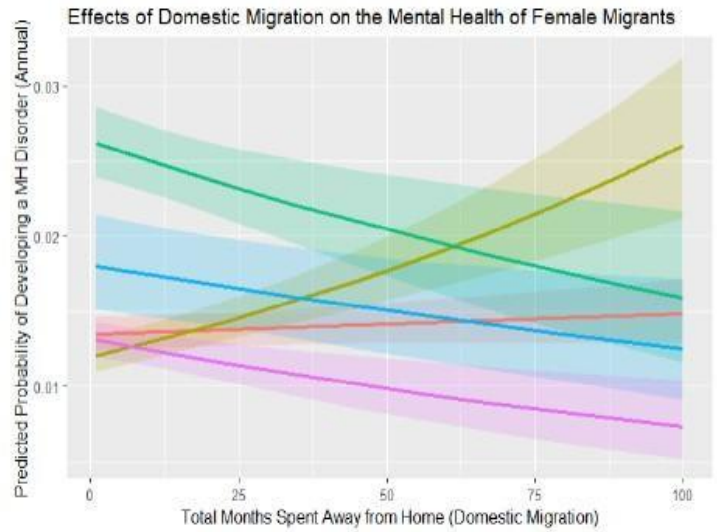
Predicted Probabilities

Predicted probability models provide a useful tool to examine the relationship between migration and mental health outcomes among male and female migrants (Muller and MacLehose, 2014). In this study, predicted probabilities were used to examine the relationship between migration, measured by total months away domestically or internationally, and mental health, specifically the predicted probability of developing a mental health disorder annually. The study includes four graphs that illustrate this relationship, namely the effects of domestic and international migration on the mental health of both male and female migrants. The independent variable in these models is months away, ranging from 0 months away from home to 100 months away from home. The dependent variables range from 0 to 0.10, indicating the predicted probability of developing a mental health disorder each year. Although the range of the dependent variable is not extensive, the annual rate of developing a mental health disorder is a notable outcome.

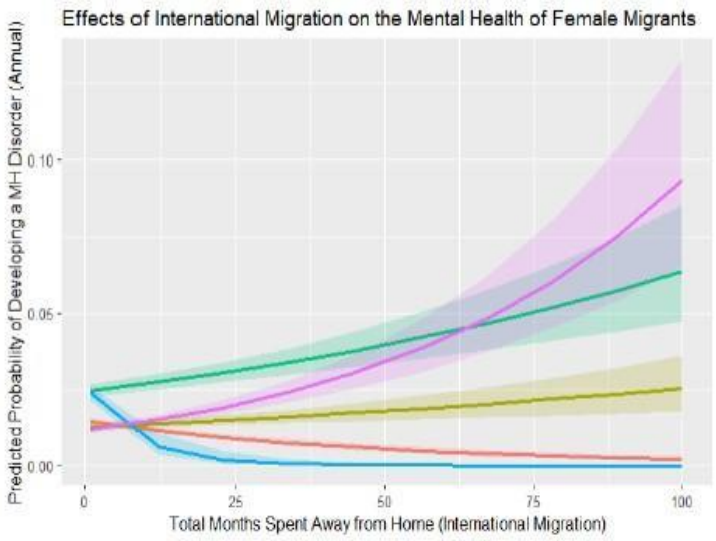
The use of predicted probability models allows for the assessment of the impact of specific variables on mental health outcomes while controlling for other variables at fixed values. The fixed values used in this study represent a particular type of person and provide insight into the impact of migration on mental health outcomes for individuals with similar characteristics.

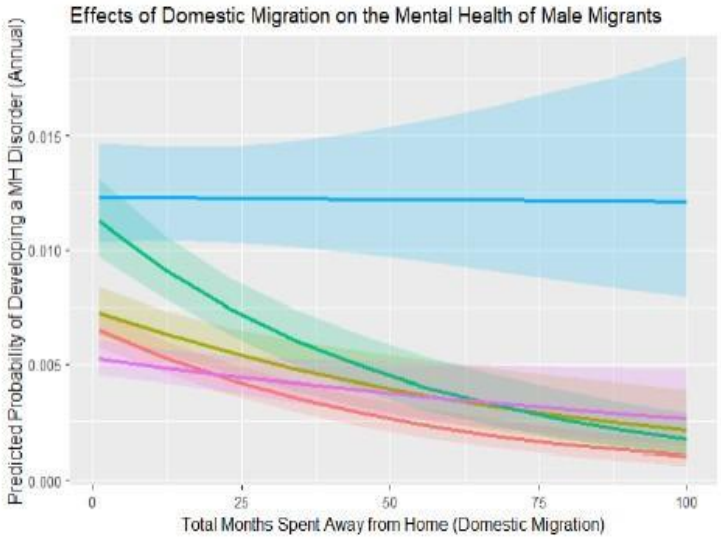
Predicted Probabilities

Graph 1a

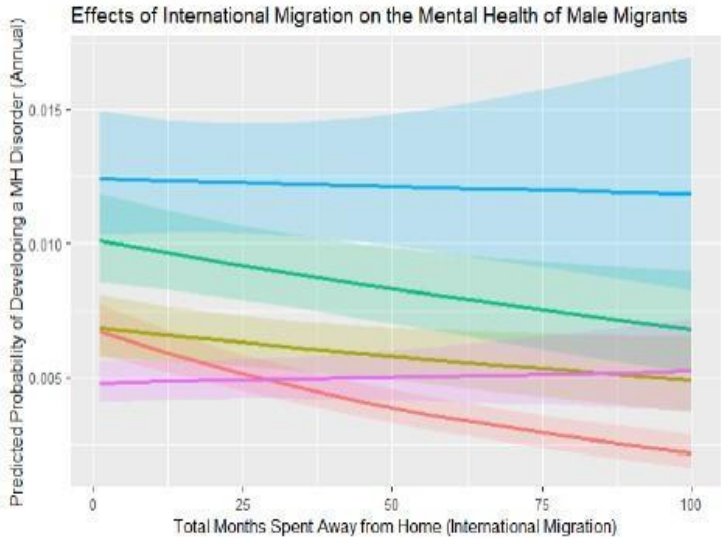


Graph 1b





Graph 1c



Graph 1d

The present study employs predicted probability models to examine the impact of specific variables on mental health outcomes for particular types of individuals. These models hold other variables at fixed values to predict the outcome for a specific person. Specifically, for the international migration models, domestic migration is held constant at the mean of the sample (9.67 months ever away), while for the domestic migration models, international migration is held constant at the mean of the sample (12.441 months ever away). In both models, age (28.8 years) and landownership (6.81 bigha) are held constant at the mean of the sample. Education status is held stable at the categorical variable of "any secondary education", while marriage status is established as "currently married". Physical health is established as "good". Additionally, the model assumes no savings in a bank and an income of less than or equal to Rs 50,000 every year.

The results presented in Graph 1a indicate that the relationship between time spent away from home and mental health outcomes for female domestic migrants varies by ethno-caste identity. Specifically, for Newari, Dalit, and Terai Janajati female migrants, an extended period of migration is associated with a lower probability of experiencing a mental health disorder. However, for Brahmin/Chhetri and Hill Janajati female migrants, a longer period of migration within Nepal is associated with an increased probability of experiencing a mental health disorder. The increase is quite large for Hill Janajati female migrants and only slight for Brahmin/Chhetri female migrants. These findings suggest that intra-ethno-caste identity and gender dynamics may play a role in the mental health outcomes of female domestic migrants, as internal migration does not lead to the shedding of ethno-caste identity.

As depicted by Graph 1b, the longer that Newari and Brahmin/Chhetri international female migrants were away from home, the probability of experiencing a mental health disorder decrease, approaching zero. Conversely, for Hill Janajati, Terai Janajati, and Dalit international female migrants, the probability of experiencing a mental health disorder increases with the longer duration of the international migration experience. The increase is particularly high for Terai Janajati female migrants, followed by Dalit female migrants. These findings suggest that ethno-caste identity is a protective factor in the mental health outcomes of high-caste international female migrants. The high ethno-caste groups, such as Newari and Brahmin/Chhetri, may have financial resources which may contribute to their better mental

health outcomes. This finding is consistent with the historical socioeconomic advantage of high-ethno-caste groups over low-ethno-caste groups in Nepal (Gellner, 1986, Williams et al., 2020).

Moreover, our descriptive analysis indicates that more Brahmin/Chhetri migrate internationally than any other ethno-caste group, which could partly explain their better mental health outcomes. Established community level migration pathways could help build and bolster social support and networks while aiding in acquiring the navigational knowledge needed for a better immigration experience. However, it is worth noting that this finding does not align with the general literature on migration, which suggests that a longer duration of migration leads to better mental health outcomes due to increased adaptation to the host society (Virupaksha, 2014; Stillman et al., 2009). These results suggest that this may not be the case for all ethno-caste groups and that the intersection of ethno-caste identity and migration should be considered in understanding the mental health outcomes of female migrants.

Graph 1c illustrates that the longer that Brahmin/Chhetri, Hill Janajati, Terai Janajati, and Dalit domestic male migrants were away from home, the probability of experiencing a mental health disorder decreased, at various rates. In contrast, the probability of experiencing a mental health disorder generally remains the same, with only a slight decrease, for Newari male migrants. Newari people, originally from Kathmandu, are known to have a strong attachment to their homeland (Gellner,1986; Williams et al., 2020). This could explain why even migrating within the country but outside of the Kathmandu valley, may not lead to a dramatic improvement in the mental health of Newari males, as it is evident to do so with other ethno-caste categories.

As shown in Graph 1d, the longer that Brahmin/Chettri, Hill Janajati, Dalits, and Newari male international migrants were away from home, the probability of experiencing a mental health disorder decreased, at various rates. The probability of obtaining a mental health disorder decreased the most for Brahmin/Chhetri international male migrants and only slightly decreased for Newari Migrants. However, for Terai Janajati migrants, there was a slight increase in the probability of experiencing a mental health disorder with a longer duration of migration.

The associations between months away from home and the probability of experiencing a mental health disorder were similar for male and female Terai Janajati migrants: not the magnitude or the rate, but the direction. For each additional month away from home, both, male and female Terai Janajati migrants have a decreased probability of experiencing a mental health disorder as domestic migrants and they have an increased probability of experiencing a mental

health disorder as international migrants. Newari female migrants experience a decreased probability of experiencing a mental health disorder compared to Newari male migrants, even though the ethno-caste community is known for its sacred relationship with the land of Kathmandu valley. This could suggest gender disparities within the ethno-caste category. This suggests that the gender norms within each migration group may be different, but perhaps more equal for males and females in the Terai Janajati category.

The relationship between the duration of migration and the likelihood of experiencing a mental health disorder was similar for male and female Terai Janajati migrants. This is in terms of direction, not magnitude or rate of change. Specifically, both male and female Terai Janajati migrants showed a reduced probability of experiencing a mental health disorder as domestic migrants, and an increased probability as international migrants, with each additional month spent away from home. In contrast, Newari female migrants showed a lower probability of experiencing a mental health disorder compared to Newari male migrants, even though the ethno-caste identity is known for its close ties to the Kathmandu valley. These findings suggest the presence of gender disparities within the Newari community, which may reflect differences in gender norms across different migration groups. Notably, the gender norms appear to be more equitable for males and females in the Terai Janajati category.

On the whole, the analysis indicates that females are more likely than males to experience an elevated risk of developing a mental health disorder each year. These findings provide further evidence of the gender differentials and disparities that exist in the country.

Conclusion and Discussion

In this study I investigate the relationship between migration experience and mental health disorder diagnoses among migrants in Nepal, with a particular focus on how ethno-caste identity and gender shape this relationship. I use an intersectionality framework, which recognizes that individuals have multiple social identities and considers how these identities intersect and reinforce each other to impact health outcomes. More specifically, I frame the intersection of an individual's migration status, gender, and ethno-caste identity as a social determinant of health. The study aims to add to the second wave of migration literature, which examines migration through cultural and social lenses, to obtain a more nuanced understanding of the effect of migration on mental health. It highlights the importance of targeted policy

reforms to protect the mental health of migrants, given their significant contribution to the economy of Nepal at both micro and macro levels.

I put forth four hypotheses that are related to the mental health outcomes of different groups of migrants from Nepal based on their gender, ethno-caste identity, and international and domestic migration experience. However, there are some common threads across the hypotheses. Firstly, discrimination and stigma based on gender and ethno-caste identity can negatively affect mental health outcomes. Female and low ethno-caste migrants experience gender and ethno-caste -based discrimination within Nepal. Thus, they may experience improved mental health and decreased likelihood of acquiring a mental health disorder if they are out of the country for a longer duration of time. However, domestic migration seldom removes the discrimination and stigma associated with gender and ethno-caste identity. Instead, coupled with a distanced social support system, it may amplify the negative mental health effects of these identities.

Secondly, a change in social status can impact the mental health outcome of individuals. International migration enables those with low ethno-caste identities to shed their ethno-caste category and increase their social status, which would lead to a decline in the likelihood of experiencing a mental health disorder. Conversely, those with high ethno-caste identities may have a reduced social status by having their identity change to that of an immigrant, leading to an increased likelihood of acquiring a mental health disorder. Domestic migration would not change the perception and experience of ethno-caste in Nepal, so individuals from low ethno-caste categories would have lower social status and an increased likelihood of experiencing a mental health disorder, while those in high ethno-caste categories would have higher social status and an increased likelihood of experiencing a mental health disorder.

Finally, the unique challenges faced by different groups of migrants, both in their home country and abroad, can significantly impact their mental health outcomes. For example, certain ethno-caste categories may have established migration pathways that make the experience seem less daunting. This reduced sense of unfamiliarity and encountering obstacles and discrimination based on ethno-caste identity may contribute to a lower likelihood of acquiring a mental health disorder among these migrants.

To test these hypotheses, I first merge data from the Household Registry Survey and the Agriculture and Consumption Survey, within the Chitwan Valley Family Survey dataset with the data from the Nepal-Composite International Diagnostic Interview dataset. The analyzed data

covers the time from 2009 to 2016. I analyze the data using event history analysis in conjunction with logistic regression. Through this analysis, I find that the diagnosis of a mental health disorder is associated with each categorical combination of gender, ethno-caste identity, and migration experience in distinct ways.

More specifically, international migration increases the probability of female migrants from lower ethno-caste categories experiencing mental health disorders compared to their upper-ethno-caste or male counterparts. Ethno-caste acts as a protective factor forth the mental health of female international Brahmin/Chettri and Newari migrants. This finding aligned with the earlier stated hypothesis. Furthermore, except for Terai Janajati males, the probability of experiencing a mental health disorder either decreased or remained the same for all international and domestic male migrants. For each additional month away internationally, the probability of experiencing a mental health disorder increased for Terai Janajati male migrants. The associations between months away from home and the probability of experiencing a mental health disorder were similar for male and female Terai Janajati migrants. For each additional month away, male and female Terai Janajati migrants were away from home, they have a decreased probability of experiencing a mental health disorder as domestic migrants. As international migrants, however, they had an increased probability of experiencing a mental health disorder. This suggests that gender relationships can differ between specific ethno-caste groups. This was a surprising finding that was not anticipated by the initial hypotheses or literature. Therefore, it indicates the necessity of investigating not only inter-ethnic-caste social mechanisms but also intra-ethno-caste social mechanisms.

Many of the findings in this study contrast with the hypotheses formulated based on existing literature, some of which originated from studies conducted in the Global North. Surprisingly, the results indicate that migration generally leads to improved mental health outcomes across various ethno-caste and gender identity combinations, contradicting the expectations derived from the available literature. This novel finding adds a valuable contribution to the existing body of work in this field.

This paper highlights the importance of considering the unique dynamics and contexts of migration in the Global South. While previous research predominantly focused on health disparities and negative mental health outcomes associated with migration, the current findings challenge these assumptions. By demonstrating that migration can have positive effects on

mental health outcomes, the study expands our understanding and encourages further exploration of the multifaceted relationship between migration experience, ethno-caste identity, gender, and mental health.

This study sheds light on the complex interplay between migration experience, gender, ethno-caste identity, and mental health among Nepali migrants. However, there are several limitations that need to be acknowledged. Firstly, this study was limited to individuals whose migration and mental health status were captured between 2009 and 2016. Therefore, I cannot account for migration or mental health status before 2009. This may limit the generalizability of our findings to earlier or later periods. Given that both, migration and mental health diagnosis have long-term effects and a tendency to re-occur, future studies could benefit from including a longer time frame to capture a more comprehensive understanding of migration and mental health in Nepal.

Secondly, the survival analysis model used in this study only looks at the first diagnosis of a mental health disorder. Therefore, it does not capture multiple experiences of mental health issues that individuals may experience over time. It is possible that some individuals may have experienced multiple or compounding mental health disorder diagnoses, which could impact their overall mental health and well-being. Future studies could consider alternative methods that capture multiple experiences of mental health issues to obtain a more nuanced understanding of the relationship between migration and mental health.

Finally, it is important to note that data used to diagnose mental health disorders are retrospective in nature. Even though the life calendar was used to help individuals recall events, it is still possible that there may be some error in memory. Future studies could benefit from incorporating multiple methods to capture mental health.

Despite these limitations, this study highlights the need for further research to understand the complex and multifaceted relationships between migration and mental health, and the importance of considering the interactions of ethno-caste identity and gender in shaping these relationships as social determinants of health. Furthermore, this study underscores the need to not only study inter-ethno-caste social mechanisms, but also intra-ethno-caste social mechanisms, to gain a more comprehensive understanding of the relationships between migration, mental health, and social identities in Nepal.

The implications of these findings are particularly important for policymakers and healthcare providers working to address mental health disorders among migrants, especially women from marginalized ethno-caste groups. Developing targeted interventions and programs aimed at improving the mental health outcomes of these groups could have a significant impact on the overall well-being of these populations. These findings also contribute to the broader literature on the relationship between migration and mental health outcomes, offering insight into the complex interplay between these factors within specific populations. Furthermore, these unexpected findings underscore the need for more context-specific research in the Global South to better capture the complexities and nuances of migration experiences. By examining how various factors interact and influence mental health outcomes, future studies can provide a more comprehensive understanding of the implications of migration on the well-being of individuals in different sociocultural contexts.

It is worth noting that public policies have the potential to perpetuate inequalities that may lead to ill health (Compton and Shim, 2015). However, this also means that policymakers have the power to implement measures that can mitigate the negative effects of these policies. By implementing policies that promote equitable access to healthcare and mental health services, policymakers can help address the underlying social determinants of mental health outcomes among migrants. This can lead to more positive outcomes for these populations and ultimately contribute to a more just and equitable society.

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Appendix A1:

Variable Codebook	
Outcome Variable	
Mental Disorder Diagnosis	1 = Diagnosed with depression, anxiety, or post-traumatic stress disorder 0 = Not diagnosed with depression, anxiety, or post-traumatic stress disorder
Predictive and Control Variables	
Domestic Migration [Individual level data]	Number of months ever away
International Migration [Individual level data]	Number of months ever away
Ethno-Ethno-ethno-caste [Individual level data]	1 = Brahmin/Chhetri 2 = Hill Janajati 3 = Dalit 4 = Newar 5 = Terai Janajati
Age [Individual level data]	Number of years since birth
Gender [Individual level data]	[Only included in the dataset that includes both, males and females] 1 = Male 2 = Female
Marriage Status [Individual level data]	1 = Currently Married 2 = Was Married 3 = Never Married
Education [Individual level data]	1 = No Formal Education 2 = Any Primary Education 3 = Any Upper Primary Education 4 = Any Secondary Education 5 = Any Higher Secondary Education 6 = BA/Equivalent or Beyond
Physical Health [Individual level data]	1 = Excellent 2 = Very Good 3 = Good 4 = Fair 5 = Poor
Savings [Household level data]	0 = No 1 = Yes
Landownership [Household level data]	The total amount of land owned by a household (Bigha)
Income [Household level data]	1 = Total household income is <= 10,000 rupees per year 2 = Total household income is <= 25,000 rupees per year 3 = Total household income is <= 50,000 rupees per year 4 = Total household income is <= 100,000 rupees per year 5 = Total household income is <= 250,000 rupees per year

	6 = Total household income is <= 500,000 rupees per year