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DISCUSSION OF THE RELATIONSHIP BETWEEN THE UNEMPLOYMENT ITEM AND THE MURDER RATE IN THE REPUBLIC OF KAZAKHSTAN

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Abstract

Background: Murder is one of the most serious societal problems. Risk factors for murder and indices of societal phenomena that are likely to increase the incidence of murder should be ascertained, and preventive measures based on definitive evidence require discussion for implementation.

Objective: We speculated that unemployment may be strongly related to emotions that stimulate people to commit murder.

Materials and Methods: Herein, we researched the relationship between murders and unemployment in the Republic of Kazakhstan, which became an independent country in December 1991 and has rapidly modernized since then. This relationship has rarely been discussed in the Republic of Kazakhstan. We examined the annual murder rate (per 100,000 population) and the annual unemployment rate (%) published by the International Labor Organization (ILO) and International Monetary Fund (IMF) in the Republic of Kazakhstan that occurred over the 29-year period from 1992 to 2020. The relationship between the murder rate and the unemployment rate was analyzed statistically.

Results: The annual murder rate in the Republic of Kazakhstan was significantly related to the country's annual unemployment rate (according to the ILO and IMF). An increase in the unemployment rate is likely to be related to an increase in murders.

Conclusions: Personnel and organizations in areas dealing with unemployment and with murders should work together to prevent each to the greatest extent possible. Changes in a country's unemployment rate should also be continuously monitored by the identification of both momentary and continued increases in that rate, in part toward the prevention of murders.

Keywords: Republic of Kazakhstan; murder; unemployment; relationship; death; prevention.

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Резюме

ОБСУЖДЕНИЕ ВЗАИМОСВЯЗИ МЕЖДУ УРОВНЕМ БЕЗРАБОТИЦЫ И ПОКАЗАТЕЛЕМ УБИЙСТВ В РЕСПУБЛИКЕ КАЗАХСТАН

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Актуальность. Убийство остаётся одной из наиболее серьёзных социальных проблем. Необходимо выявлять факторы риска и социальные показатели, способствующие росту числа убийств, а также обсуждать профилактические меры, основанные на достоверных доказательствах.

Цель. Изучение показателей безработицы, которая может значительно усиливать эмоциональные состояния, побуждающие людей к совершению убийств.

Материалы и методы. В настоящем исследовании рассмотрена взаимосвязь между убийствами и безработицей в Республике Казахстан, ставшей независимым государством в декабре 1991 года и переживающей быстрые процессы модернизации. Такая взаимосвязь до сих пор практически не обсуждалась в Казахстане. Мы проанализировали годовой уровень убийств (на 100 000 населения) и годовой уровень безработицы (%) за 29-летний период с 1992 по 2020 гг., опубликованные Международной организацией труда (МОТ) и Международным валютным фондом (МВФ). Корреляция между показателями оценивалась статистически.

Результаты. В Казахстане годовой уровень убийств достоверно коррелировал с годовым уровнем безработицы (по данным МОТ и МВФ). Повышение безработицы, вероятно, связано с увеличением числа убийств.

Выводы. Службам, занимающимся вопросами безработицы и расследованием убийств, следует максимально тесно сотрудничать в целях их профилактики. Изменения уровня безработицы необходимо непрерывно мониторировать, уделяя внимание как кратковременным, так и устойчивым тенденциям роста, что позволит частично предупредить убийства.

Ключевые слова: Республика Казахстан; убийство; безработица; взаимосвязь; смертность; профилактика.

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Түйіндеме

ҚАЗАҚСТАН РЕСПУБЛИКАСЫНДАҒЫ ЖҰМЫССЫЗДЫҚ КӨРСЕТКІШІ МЕН КІСІ ӨЛТІРУ ДЕҢГЕЙІ АРАСЫНДАҒЫ ӨЗАРА БАЙЛАНЫС ЖӨНІНДЕГІ ТАЛҚЫЛАУ

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Негіздеме. Кісі өлтіру — қоғамдағы ең өзекті қылмыстардың бірі. Кісі өлтіруге итермелейтін қауіп-қатер факторларын және осы көрсеткіштің өсуіне ықпал ететін әлеуметтік жағдайларды анықтау, сол деректерге негізделген алдын алу шараларын талқылау маңызды.

Мақсат. Жұмыссыздық кісі өлтіруге итермелейтін эмоцияларды күшейтуі мүмкін болжамын ұсыну.

Материалдар мен әдістер. 1991 жылдың желтоқсанында тәуелсіздік алғаннан кейін қарқынды жаңғырып келе жатқан Қазақстан Республикасында кісі өлтірулер мен жұмыссыздық арасындағы байланыс сирек зерттелген. Біз 1992–2020 жылдар аралығындағы 29 жылдық кезеңде Халықаралық еңбек ұйымы (ХЕҰ) мен Халықаралық валюта қоры (ХВҚ) жариялаған деректерді қолданып, жылдық кісі өлтіру коэффициентін (100 000 тұрғынға шаққанда) және жылдық жұмыссыздық деңгейін (%) талдадық. Көрсеткіштер арасындағы корреляция статистикалық әдістермен бағаланды.

Нәтижелер. Қазақстандағы жылдық кісі өлтіру деңгейі елдің жылдық жұмыссыздық деңгейімен (ХЕҰ және ХВҚ деректері бойынша) айқын өзара байланыс көрсетті. Жұмыссыздықтың өсуі кісі өлтірулердің артуымен астасуы ықтимал.

Қорытындылар. Жұмыссыздықпен және кісі өлтірумен айналысатын құрылымдар аталған құбылыстардың әрқайсысын барынша азайту үшін бірлесіп әрекет етуі тиіс. Елдегі жұмыссыздық коэффициентінің өзгерістерін, әсіресе оның қысқа мерзімді және тұрақты өсуін үздіксіз бақылау кісі өлтірулердің алдын алуға жәрдемдеседі.

Түйін сөздер: Қазақстан Республикасы; кісі өлтіру; жұмыссыздық; өзара байланыс; өлім; алдын алу.

Дәйексөз үшін:

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Introduction

Unemployment has been shown to be related to both physical and mental health [9,14-17,20]. Based on their review of the literature published in 2004–2014, Frاسquilho et al. reported a possible relationship between the occurrence of an economic recession and a higher prevalence of mental health problems including common mental disorders, substance disorders, and ultimately suicidal behaviors [2]. In December 1991, the Republic of Kazakhstan declared independence from the Soviet Union; about 30 years have thus passed since it became an independent country. The population of the Republic of Kazakhstan consists of about 68% Kazakhs, about 19% Russians, about 3% Uzbeks, about 1% Ukrainians, about 1% Uyghur's, about 1% Tartars, about 1% Germans, and about 5% some other ethnic group [11]. Occupying a vast area (~2,725,000 km²) with abundant resources and a population of ~19 million people, the Republic of Kazakhstan has rapidly modernized in various ways over the past few decades. Based on the waves of change that have occurred, the Republic of Kazakhstan has been attracting attention from all over the world. However, the societal issues of unemployment, mental health problems, and murder plague the Republic of Kazakhstan just as they do elsewhere.

Like the terms "self-harm" and "harm to others", a similar distinction is made between the terms "suicide" and "murder". One of our research group's studies demonstrated that among various labor, financial, and economic factors, only the unemployment rate was related to the suicide rate in the Republic of Kazakhstan in recent years [8]. Notably, that investigation of the relationship between the suicide rate and (i) the unemployment rate, (ii) the rate of increase in the consumer price index (CPI), (iii) total exports, and (iv) total imports in the country revealed an adjusted R² at 0.624, $p < 0.01$ for the unemployment rate, and p -values > 0.05 for the rate of increase in the CPI, total exports, and total imports [8]. Risk factors for murder must also be ascertained, in addition to indices of societal phenomena that are likely to drive people to commit murder. Measures that can be taken to prevent murders or at least reduce its incidence that are based on definitive evidence need to be discussed.

A database published in Japan shows that the countries with a murder rate > 30 per 100,000 population include the Bolivarian Republic of Venezuela (49.88 [2017]), Jamaica (44.68 [2020]), Lesotho (43.56 [2015]), the Republic of Trinidad and Tobago (38.57 [2019]), the Republic of El Salvador (37.16 [2019]), the Republic of Honduras (44.68 [2020]), and the Republic of South Africa (33.46 [2020]) [3]. From 2015 to 2019, the murder rate in Japan was 0.24–0.28 per 100,000 population [3]. In 2020, the murder rate in the Republic of Kazakhstan was 3.23 per 100,000 population [3].

Based on the concepts of self-harm and harm to others and our previous study of suicide in the Republic of Kazakhstan [8], we next examine the relationship between

murder and unemployment in the Republic of Kazakhstan as follows.

Materials and Methods

This study design was to discuss the relationship between two issues (unemployment and murder) using statistical analysis. We researched the annual murder rate (per 100,000 population) in the Republic of Kazakhstan over the 29-year period from 1992 to 2020 [4].

We obtained the annual unemployment rate (%) during the same period from the International Labor Organization (ILO) and the International Monetary Fund (IMF) [5,6]. The murder rate in the Republic of Kazakhstan was not available for the years 2005–2007, 2016, 2018, and 2019, and the unemployment rate according to the IMF was not available for 1992 or 1993. The data obtained were only numerical values, therefore, this study consisted of data without individual information, from a published database [4-6]. These data were collected on January 18 and 20, 2022.

We calculated the correlation coefficients between the murder rate and the unemployment rate (according to both the ILO and IMF), and the relationship between the murder rate and the unemployment rate (according to both ILO and IMF) was performed to a single regression analysis using Excel. Some data could not be obtained, and we therefore statistically analyzed the relationship between the murder rate and the unemployment rate according to the ILO over the 23-year period excluding 2005–2007, 2016, 2018, and 2019. The relationship between the murder rate and the unemployment rate according to the IMF was statistically analyzed over the 21-year period excluding 1992, 1993, 2005–2007, 2016, 2018, and 2019. Based on these results, we discuss whether the increase in the unemployment rate in the Republic of Kazakhstan is related to the country's murder rate.

Results

During the period studied (the 29-year period from 1992 to 2020), the annual murder rate (per 100,000 population) ranged from 3.23 to 16.79; the annual unemployment rate according to the ILO ranged from 1.00% to 13.46%, and the annual unemployment rate according to the IMF ranged from 4.78% to 13.47%. The unemployment rate in 2020 was estimated by the IMF to be 4.93%. Unemployment means "wanting to work but not being able to because of a lack of work" or "loss of one's job".

The correlation coefficient between the annual murder rate and the annual unemployment rate according to the ILO was $r = 0.620$ and $p < 0.01$, and that between the annual murder rate and the annual unemployment rate according to the IMF was $r = 0.895$ and $p < 0.001$. The annual murder rate was significantly related to the annual unemployment rate according to both the ILO ($R^2 = 0.384$, $p = 0.002$, and $y = 0.7483x + 5.7982$) (Figure 1) and the IMF ($R^2 = 0.800$, $p = 4.4974 \times 10^{-8}$, and $y = 1.2678x + 0.8046$) (Figure 2). The results thus demonstrate that the murder rate in the Republic of Kazakhstan was clearly related to the country's unemployment rate.

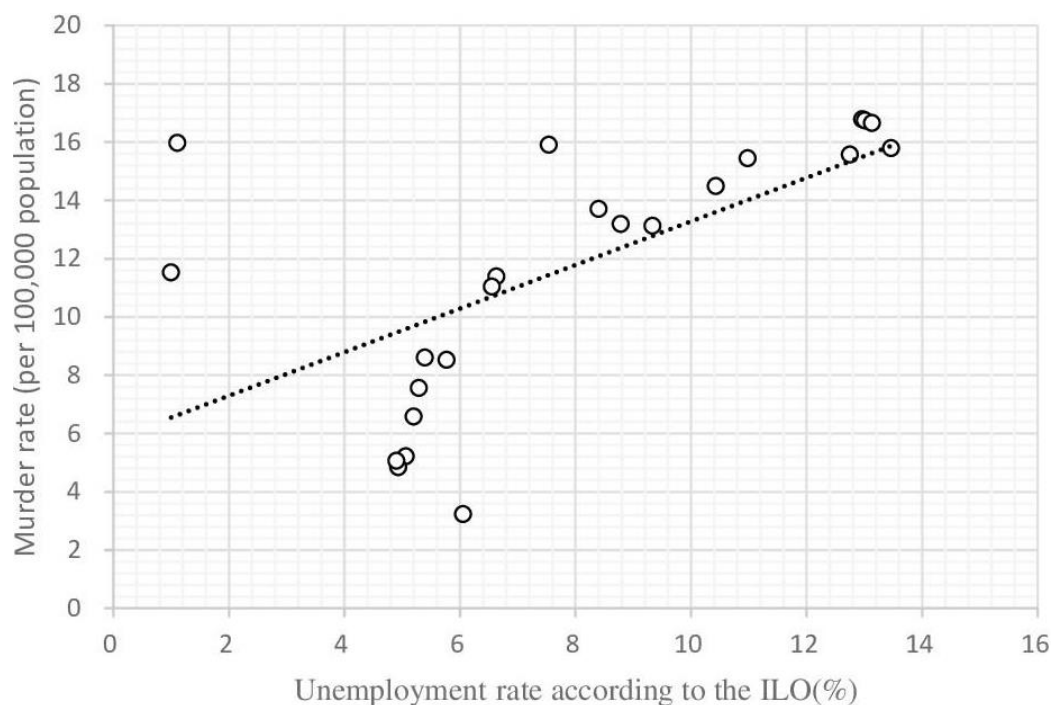


Figure 1. The relationship between the murder rate and the unemployment rate in the Republic of Kazakhstan according to the International Labor Organization (ILO) from 1992 to 2020 excluding 2005–2007, 2016, 2018, and 2019.

✖The murder rate was not available from 2005–2007 and in 2016, 2018, or 2019.

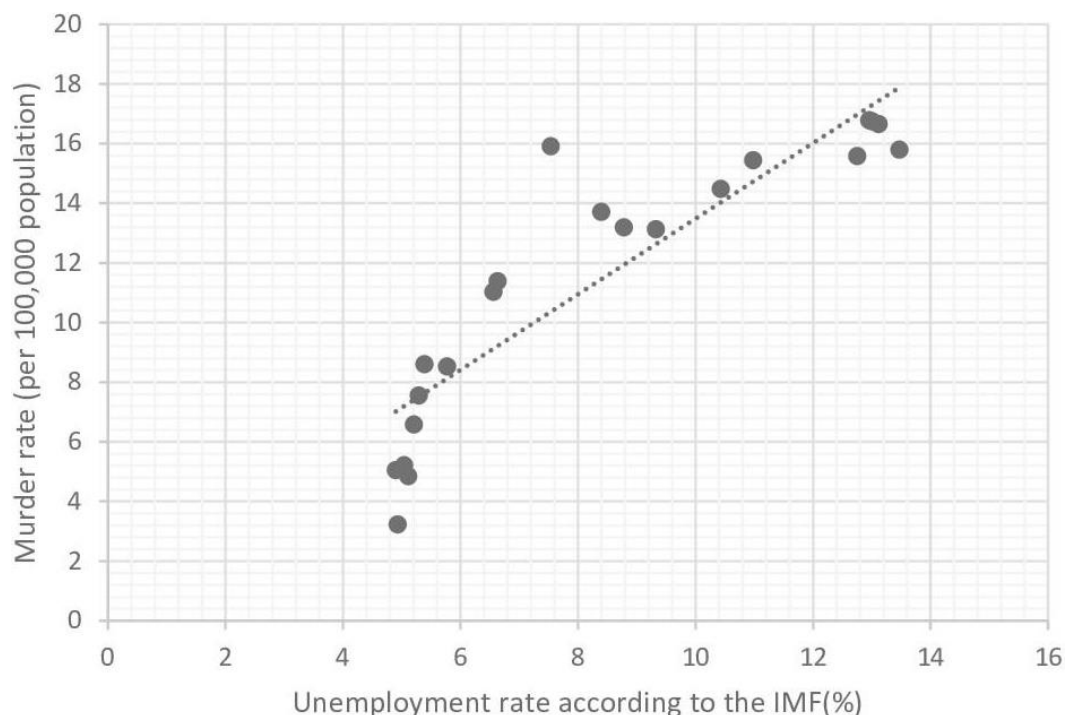


Figure 2. The relationship between the murder rate and the unemployment rate in the Republic of Kazakhstan according to the International Monetary Fund (IMF) from 1992 to 2020 excluding 1992, 1993, 2005–2007, 2016, 2018, and 2019.

✖The murder rate was not available from 2005–2007 and in 2016, 2018, or 2019, and the unemployment rate according to the IMF was not available in 1992 or 1993.

Discussion

Persistent unemployment is likely to result in increased exasperation with life or with mental exhaustion [7,10]. The authors of a U.S. study suggested that the unemployment rate is one factor related to monthly time-series suicide and

homicide rates from the 1950s to the 1980s [19]. The relative risk of infanticide was also reported to clearly increase when the unemployment rate increases [1]. Mental and physical exhaustion from being unemployed plus concerns about one's current and future lifestyle (i.e.,

sentiments that drive a person to act) may lead to one's own death or the death of someone in a weaker position [18].

We believe that it is important to consider social issues academically as in the present study. Social issues involve various fields and areas. It can be said that this study is based on the wide perspective and multiple viewpoints. When considering social issues, it is necessary to not only present analysis results, but also to make suggestions that consider measures and responses based on the results.

In 2023, Noso et al described the following contents at that time. Amidst the spread of the new type coronavirus, there have been incidents such as theft incidents of intrusion into closed stores, fraud cases of defrauding benefits related to measures against the spread of infection, and the sale of counterfeit medicines claiming to be effective against the new type coronavirus [12]. In addition, those who use COVID-19 countermeasures as an excuse to deceive the elderly (e.g., "I have a refund, but I need to avoid crowding the window due to the COVID-19, so I want you to go to an ATM and complete the procedure"), what induces was also happening [12]. The threat of cyberspace has become more serious due to the rapid transition to cyberspace without adequate preparations to combat the novel coronavirus [12]. In order to maintain security, it is becoming necessary for legal systems, systems, and people's awareness and behavior to change together [12].

In the present, a lot of issues and problems are occurring in various countries around the world. These issues involve life and livelihood. Public health, hygiene, legal medicine (forensic medicine), environment, health service, health services management, psychiatry and narcology, physical and peace science are fields that are definitely related to these issues. To summarize it, this translates into sociology, social medicine, and clinical medicine. The discussion and suggestions presented were from each of these fields. In other study by Noso et al in 2023 [13], it was described the following from related content of COVID-19. As further measures, 'hospitals should make maximum efforts to prevent infection, continue treatment and enjoy their life', 'restrictions on non-essential outings', 'they may have various concerns about infection', 'there is no need to be overly afraid', 'preventive measures can reduce the risk of infection', 'stay in touch with family and friends by phone or email to prevent social isolation', 'providing telephone consultations with medical institutions - Cancer Supportive Care Center', and 'the cornerstone of COVID-19 diagnosis is the PCR test, which varies in sensitivity and may generate false negatives, thus, multiple studies discuss the combination of PCR and chest CT for increased accuracy of detecting COVID-19'. The study concluded the following contents that 'the decrease in the number of cancer screening patients leads to missed opportunities for early detection' and 'accurately diagnosing COVID-19-infected patients will prevent the spread of infection and continue appropriate treatment for cancer patients as before'. The flow of this study and the content of its conclusions were exactly the wide perspective and multiple viewpoints. In addition, there were clear implications in this study.

In further study between unemployment and murder, we think that these suggested directions are important and

necessary. In addition, it is necessary to discuss contents similar to these items as the study viewpoints. Moreover researchers around the world, including us, have to wide study breadth.

As the present study, government agencies, the police, the legal system, and the medical establishment need to work together to deal with momentary and continued increases in the unemployment rate in order to combat an increase in the murder rate, as suggested by our findings regarding the Republic of Kazakhstan.

Conclusion

Our analyses indicate that increases in a country's unemployment rate (whether momentary or long-term) should be carefully monitored by all parties that can implement measures to prevent an increase in the murder rate.

We intend to continue international collaborative study in various contents.

Study Limitations:

A limitation of the present study is that only numerical data were analyzed, without individual information. In addition, further investigations in other countries and regions are necessary to test our findings of a significant relationship between the unemployment rate and murder rate.

Author Contributions:

Ken Inoue: Conceptualization, methodology, data collection, validation, formal analysis, writing - original draft, writing - review and editing, and funding acquisition.

Nursultan Seksenbayev: Methodology, data collection, and writing - review and editing.

Madina Apbassova: Methodology, validation, and writing - review and editing.

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Masaharu Hoshi, Noriyuki Kawano, Yasuyuki Fujita: Methodology, writing - review and editing, and funding acquisition.

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