Changes in the Frequency of Intimate Partner Violence Before and During Covid-19 Periods: A Systematic Review and Meta-Analysis

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The Covid-19 pandemic and their corresponding lockdowns are proven to have several influences on our daily life. One aspect, which is influenced by Covid-19 is psychological intimate partner violence (IPV). A broad range of research reports an increase of psychological IPV prevalence rates during periods of Covid-19. Therefore, this research examines the relation between periods of Covid-19 and psychological IPV by comparing the IPV prevalence rates before Covid-19 and during Covid-19. To investigate the relation between periods of Covid-19 and psychological IPV prevalence rates, a random effects meta-analysis with 28 studies (22 before and 6 during Covid-19) was performed. Additionally, four linear regression analyses were performed to check whether age, percentage of females, the country or the number of participants would moderate the effect of Covid-19 periods on psychological IPV prevalence rates. The results of this meta-analysis do not confirm the hypothesis, as no increase of psychological IPV during Covid-19 periods was found. The prevalence rates of psychological IPV were not significantly different (z=-0.388, p=.698, 95% CI= -0.326-0.219), with a prevalence rate of 24.78% before Covid-19 periods and a prevalence rate of 17.27% during Covid-19 periods. Additionally, no moderation effect was found. The main limitation of this research was the number of included studies during periods of Covid-19. Nevertheless, implications for future research can be found. These include a better-defined age range of the participants, as well as a broader definition of psychological IPV. To conclude, this research found no effect of Covid-19 periods on psychological IPV prevalence rates.

Introduction

Intimate partner violence (IPV) entails physical, sexual or psychological harm done to an individual by a current or former partner/spouse (Benavides et al., 2019). Physical violence is the intentional use of physical force done to a partner, resulting in injuries, harm or death. Sexual violence involves engaging in a sexual act against the will of the partner. This can include engaging in a sexual act, when the partner is not able to express his/her unwillingness to participate due to alcohol or drug use. Psychological aggression can include deliberately humiliating, controlling, isolating or withholding information from the victim/partner (Zolotor et al., 2009).

The World Health Organization (2021) reports that currently 27% of women experience IPV in their intimate relationships. IPV has serious consequences on their victims and our society in general. This is shown by the study of Campbell (2002), who found that IPV results in several health problems ranging from physical health problems to mental health problems. Physical health problems include injuries to the head, face, neck, thorax, breasts, and abdomen, as well as chronic pain, such as headaches or back pain. Recurring central nervous system symptoms including fainting or seizures are also consequences of IPV. Mental health problems include depression, post-traumatic stress disorder or suicidal tendencies, as well as a tendency to show abusive behaviour regarding alcohol or drugs. Additional symptoms can include loss of appetite, eating disorders, chronic irritable bowel syndrome. Moreover, victims of IPV experience long-term consequences as well, even after the violent intimate relationship and abuse occurred. Resulting in a prolonged poor health status, poor quality of life and high use of health services (Campbell, 2002).

Besides influencing the health of intimate Partners, IPV often impacts the health of infants as well as it often occurs during pregnancies and is associated with detrimental outcomes for the infant (Campbell, 2002). Additionally, the study of Coker et al. (2000) indicates that psychological IPV next to physical IPV can have severe health consequences as well. Such as migraine or arthritis and impairments in the daily functioning such as being unable to go to work. Furthermore, psychological and physical IPV are connected with each other and psychological aggression can lead to a decreased physical wellbeing (Coker et al., 2000). In conclusion IPV results in several severe health consequences for the victims.

Moreover, research shows that IPV is not fixed in its frequencies of occurrence, but is changing over the years. The study of Iman'ishimwe Mukamana et al. (2020) indicates a decrease of IPV from 45.2% in 2005 to 40.9% in 2010, whereas an increase of IPV occurred from 40.9% in 2010 to 43.1% in 2015. This is also found by Ally et al. (2016), who report a decrease of IPV from 2006 to 2012 (8.8% to 6.3%). Overall, evidence suggests that a general decrease of IPV occurred since 1980 (Powers & Kaukinen, 2012). Yet, the research of Orr et al. (2021) found an increase of IPV/admission to hospital from 1990 to 2009. Despite these heterogenous and contradictory findings, the results suggest common triggers, which may drive IPV frequencies. Such triggers can be sexual infidelity, especially in combination with the use of drugs or alcohol (Nemeth et al., 2012). In line with this, the findings of Ally et al. (2016) found that the consumption of illicit drugs increases the risk and frequency of IPV. Bhona et al. (2020) also found a relation of alcohol consumption and IPV perpetration among men. Next to drug intake, the age of the victims influences IPV victimization as well (Rivara et al., 2009). Research shows, that young participants are at higher risk of perceiving IPV, whereas the risk decreases with higher age. Another trigger/risk factor can be found in race, as the study of Orr et al. (2021) found that aboriginal mothers in Australia are more likely to experience IPV than non-aboriginal mothers. Therefore, eliciting factors for IPV can involve drug or alcohol abuse, sexual infidelity, age or race.

Next to these above-mentioned triggers, the Covid-19 pandemic can be seen as a trigger for increased IPV frequencies as well. Covid-19 or also called Coronavirus disease is an infectious disease caused by the SARS-CoV-2 virus (The World Health Organization, 2023). This in turn resulted in lockdowns in several countries, to control the spread of the disease. Research implies that in several countries the prevalence of IPV has increased during Covid-19 lockdowns and their accompanying regulations (Barbara et al., 2020). This might be due to the inability to escape from the abusive partner, as well as social isolation of the victim during lockdowns (Peterman et al., 2020). The increase is depicted by a rise in phone calls to helplines, as seeking help in person is difficult due to Covid-19 regulations (Barbara et al., 2020). To respond to the rise of IPV during lockdowns, alternative ways of online options to detect IPV are in development and some are already implemented. An example for this is video conferences of health care professionals and victims, where the victims can indicate non-verbally or with the help of safe-words that they experience abuse. This is important, as it becomes difficult to indicate abuse verbally when the

victim shares the same household as the perpetrator and cannot talk freely. This rise of IPV is further depicted in the study of Agüero (2021), who found a 64% increase in phone calls to IPV helplines. Especially psychological IPV has increased during Covid-19 periods.

The studies mentioned so far depict a heterogeneity in the field of IPV research related to Covid-19. As some researchers found an increase in IPV during Covid-19 and other research showed no change or decrease of IPV throughout the Covid-19 pandemic. The research of Gosangi et al. (2021) indicates a decrease in the amount of IPV incidents, but implies an increase in the severity. On the other hand, the research of Jetelina et al. (2021) found a decrease in the severity of IPV. Therefore, it is relevant to check whether an increase of IPV occurred during Covid-19 compared to IPV before Covid-19. This will be achieved by conducting a meta-analysis with the aim to compare the prevalence of psychological IPV before and during Covid-19 periods. Due to the above-mentioned heterogeneity among the present research findings, it will be scientifically beneficial to examine what the effect of Covid-19 on psychological IPV is when including all researches. It is important to investigate whether a relation between periods of Covid-19 and an increase in psychological IPV prevalence rates exist. As research of El-Nimr et al. (2021) found that psychological IPV is the most prominent IPV type. Furthermore, psychological IPV can have severe consequences on the psychological and physical wellbeing of the victim (Fernández-Fuertes & Fuertes, 2010).

Therefore, the research question is: What is the relation between the prevalence of psychological intimate partner violence before and during periods of Covid-19? It is hypothesized that the prevalence of psychological intimate partner violence is higher during Covid-19 periods than the prevalence before Covid-19 periods. The hypothesis is based on the findings of El-Nimr et al., (2021), who report an increase in psychological IPV during periods of Covid-19. These findings are also supported by the studies of Barbara et al. (2020) and Agüero (2021), who found an increase in IPV during Covid-19 as well. Therefore, it is important, to examine whether Covid-19 has an impact on intimate relationships and especially on psychological IPV. Furthermore, it can support the necessity of alternative ways of providing professional help, such as the above mentioned safe-word interventions. Additionally, it leads to more knowledge about the extent of intimate partner violence during the Covid-19 pandemic.

METHOD

Study type

The study type of this research is a random-effects meta-analysis.

Search strategy

For the article search, we used the research databases PubMed and Web of Science. For PubMed the search string was: ("intimate partner violence") OR ("IPV") OR ("partner abuse") OR ("partner victimization") OR ("coercive control") OR ("relationship abuse") OR ("domestic violence"). For Web of Science the search string was: TS = (“intimate partner violence” OR “IPV” OR “partner abuse” OR “partner victimization” OR “coercive control” OR “relationship abuse” OR “domestic violence”). The database search was conducted on the 18th of August 2021. This resulted in a total of 54711 articles. This number of articles was deduplicated with endnote 8 (EndNote, 2013), which resulted in an exclusion of 13711 The total number of articles was 41000.

Selection of studies

Four independent reviewers assessed the remaining 41000 research articles by using inclusion and exclusion criteria, which were defined beforehand. This resulted in the final articles, regarding psychological IPV, to answer the research question.

The inclusion criteria were as follows:

- Studies reporting on IPV prevalence’s in original data, which are in line with the above-mentioned definition of Benavides, Berry and Mangus (2019)
- Studies reporting on Psychological IPV
- Studies with adult participants
- No restriction on culture or publication date

We excluded articles, which were not written in English. Articles reporting on participants younger than 18 years old were also excluded. Furthermore, studies which included emergency room population were excluded. As the emergency room population was considered to have higher IPV prevalence rates due to the setting and therefore are not representative for the

actual prevalence rates of the general population. Moreover, any research, which reported violence towards children or other family members besides the intimate partner was excluded.

Data extraction

The following Data was extracted by a group of four researchers (initials: FW, BB, YS, MM): Name of author, email address, year, assessment date, Covid-19 (during Covid-19: yes or before Covid-19: no), IPV measurement, IPV type (physical, sexual, psychological, financial and control), IPV prevalence, victim percentage female, victim age, perpetrator percentage female, perpetrator age, relationship status (single, married, divorced, co-habiting and widowed), measurement setting, country, pregnant (yes or no), mental health (yes or no), HIV (yes or no), physical disabilities (yes or no), Bi-directionality of IPV (yes or no), immigrant status (yes or no).

Ethics

Approval by a Medical Ethics Committee is not applicable for this study.

Statistical analyses

In anticipation of heterogeneity a random effects meta-analysis was used as statistical analysis reference (Higgins et al., 2009). The outcomes were the pooled prevalence rates and the 95% confidence interval of psychological IPV. The meta-analysis was conducted to compare the psychological prevalence before Covid-19 periods versus psychological prevalence during Covid-19 periods by examining and comparing the mean prevalence's of before and during Covid-19 periods. The meta-analysis was performed with the use of JAMOVI (software; https://www.jamovi.org). To investigate for heterogeneity Cochran's Q and I^2 were calculated (Cochran, 1954; Higgins & Thompson, 2002). The heterogeneity is considered high, when Cochran's Q is large and I^2 has a score of 100%. The findings are considered statistically significant when $p<.05$. Additionally, with the use of the Egger test we checked for publication bias (Egger et al., 1997).

Furthermore, to check for moderators, who influence the effect of Covid-19 periods on psychological IPV prevalence rates, four linear regression analyses with the help of SPSS (software; https://www.ibm.com/products/spss-statistics) were performed. Moderators included in the analyses were the average age of the participants, the percentage of female participants, the country where the study was done and the number of participants included in the studies.

The first linear regression analysis was done with the IPV prevalence rate as dependent variable and Covid-19, age of the participants (Av. Age) and the interaction between Covid-19 and age of the participants (Av. Age) as independent variables. The second linear regression analysis was done with the IPV prevalence rate as dependent variable and Covid-19, percentage of female participants (% female) and the interaction between Covid-19 and percentage of female participants (% female) as independent variables. The third linear regression analysis was done with the IPV prevalence rate as dependent variable and Covid-19, country of the included study (Country) and the interaction between Covid-19 the country of the included study (Country) as independent variables. The fourth linear regression analysis was done with the prevalence rate as dependent variable and Covid-19, the number of participants (N) and the interaction between Covid-19 and number of participants (N) as independent variables.

Results

The initial number of articles after the first search was 54711. As a first step, these articles were checked for duplicates. This was done with the use of endnote, which resulted in the exclusion of 13711 articles and 41000 remaining articles. A second step was then performed by screening the titles and abstracts of the remaining 41000 articles, which resulted in the exclusion of another 40090 articles. They were excluded, because their content was either not about IPV or did not report on IPV prevalence rates during Covid-19. The remaining 910 articles were then checked thoroughly by screening the full text of the articles. Next, 644 additional articles were excluded, as they did not meet the inclusion criteria given above. Lastly, the remaining 266 articles were checked for psychological IPV and 238 articles were excluded, as they did not report on psychological IPV, which resulted in the final 28 articles. Of the remaining 28 articles, 22 articles reported on psychological IPV before Covid-19 and 6 articles reported on psychological IPV during Covid-19.

These steps are depicted in the flowchart below (figure 1). The final descriptive statistics for the final 28 articles are given in table 1.

Figure 1

Flowchart for inclusion and exclusion of articles

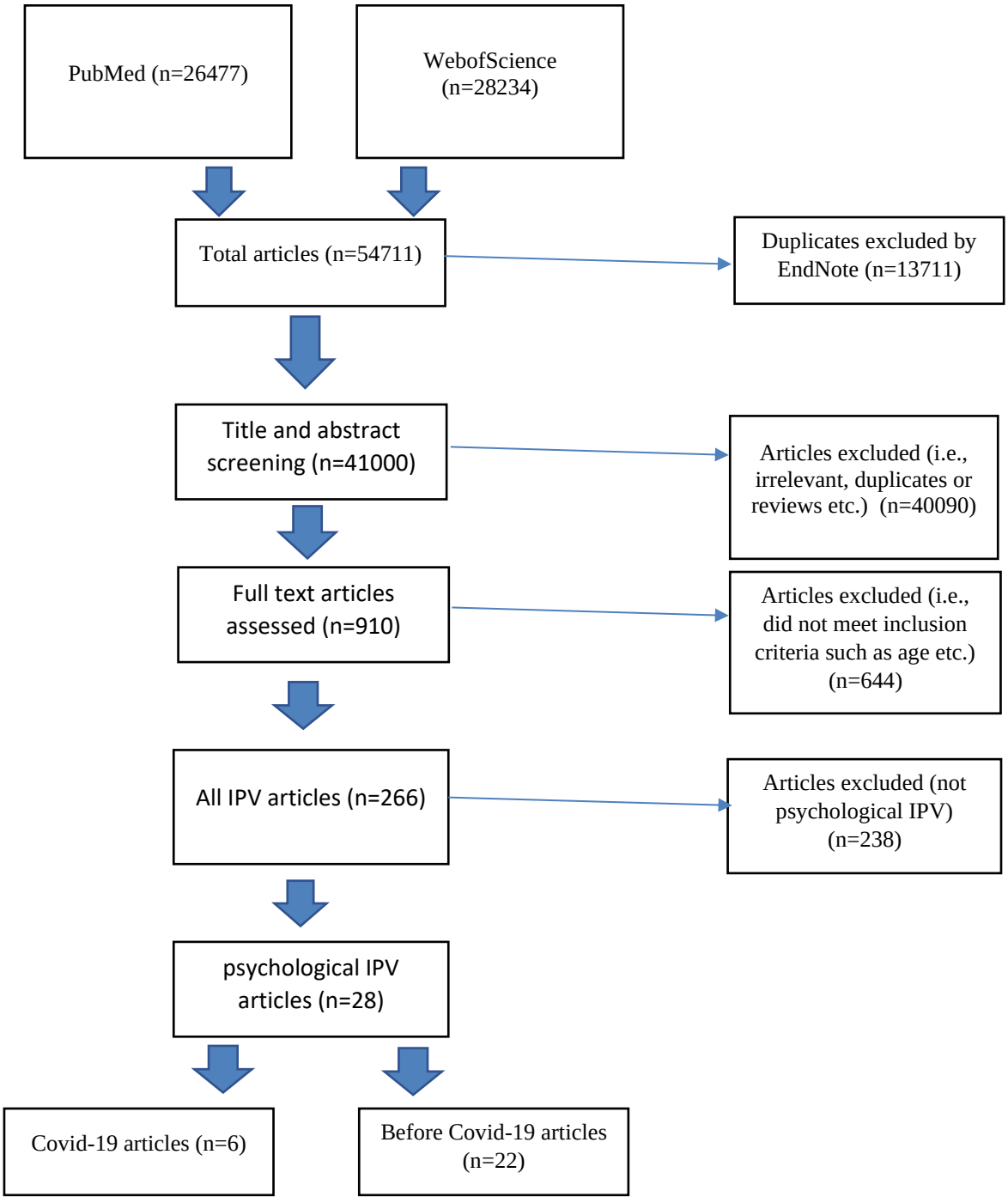


Table 1

Descriptive Statistics for Included Studies (continued on next page)

Authors	Country	Covid 19	Total N	IPV N	Prevalence	Av. age	% female
Akel et al. 2021	Lebanon	Yes	43	35	81%	42.3	100%
Alharbi et al. 2021	Saudi Arabia	Yes	2254	264	12%	-	100%
Ditekemena et al. 2021	Congo	Yes	2002	143	7%	36.3	100%
Ebert et al. 2021	Germany	Yes	3818	293	8%	-	100%
El-Nimr et al. 2021	Asia, Arabia	Yes	490	130	27%	35.2	100%
Gibbons et al. 2021	Argentina	Yes	1502	881	59%	-	100%
Harwell et al. 2003	US, Montana	No	588	94	16%	46	58%
Hou et al. 2020	China	No	813	75	9%	30.8	100%
Hu et al. 2019	China	No	1301	715	55%	27.2	100%
Hussain et al. 2020	Pakistan	No	160	111	69%	-	100%
Kamimura et al. 2014	India	No	167	8	5%	35.2	100%
Lee et al. 2014	South Korea	No	4332	1222	28%	-	48%
Leite et al. 2020	Brazil	No	795	535	67%	-	100%

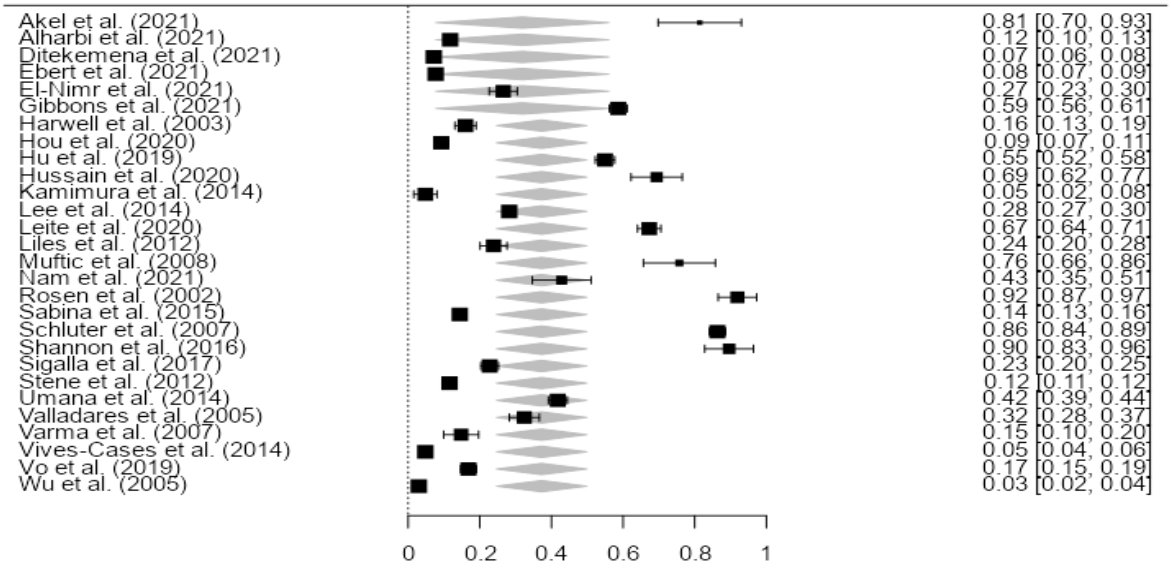
Liles et al. 2012	US	No	495	118	24%	46.1	100%
Muftic et al. 2008	Bosnia, US	No	70	53	76%	35.1	100%
Nam et al. 2021	South Korea	No	140	60	43%	-	100%
Rosen et al. 2002	US	No	99	91	92%	26.8	17%
Sabina et al. 2015	US	No	2000	288	14%	45	100%
Schluter et al. 2007	Pacific island	No	893	771	86%	-	56%
Shannon et al. 2016	US	No	77	69	90%	25	100%
Sigalla et al. 2017	Tanzania	No	1112	253	23%	-	100%
Stene et al. 2012	Norway	No	6081	702	12%	-	100%
Umana et al. 2014	Nigeria	No	1355	566	42%	-	100%
Valladares et al. 2005	Nicaragua	No	478	155	32%	-	100%
Varma et al. 2006	India	No	203	30	15%	23	100%
Vives-Cases et al. 2013	Spain	No	1607	77	5%	-	100%
Vo et al. 2019	Vietnam	No	1099	185	17%	-	100%
Wu et al. 2005	China	No	1215	36	3%	27	100%

The general prevalence of psychological IPV was 22.62%, ranging from 3% to 93%, as shown in the forest plot (figure 2). The Prevalence rates of Psychological IPV were not significantly different (z=-0.388, p=.698, 95% CI= -0.326-0.219), with a prevalence rate of 24.78% before Covid-19 periods and a prevalence rate of 17.27% during Covid-19 periods. Heterogeneity between the studies was large and statistically significant (Q(28)=10933.105, I^2= 99.9%, p<.001). Additionally, evidence for publication bias was found.

The results from the linear regression analyses for the moderation effects were not significant. The results of the first linear regression analysis were: the main effect of Covid-19 was not significant (t=-1.678, p=.124), the main effect of the moderator age of the participants was not significant (t=-1.177, p=.266) and the interaction effect of age and Covid-19 was also not significant (t=1.714, p=.117). The results of the second linear regression analysis were: the main effect of the moderator percentage of female participants was not significant (t=-1.727, p=.096), as well as the interaction effect of the percentage of female participants with Covid-19 (t=-0.028, p=.978). The independent variable Covid-19 was excluded from the analysis. The results of the third linear regression analysis were: the main effect of Covid-19 was not significant (t=0.536, p=.597), the main effect of the moderator country was not significant (t=2.132, p=.043) and the interaction effect of country and Covid-19 was not significant (t=-0.596, p=.557). Lastly, the results of the fourth linear regression analysis were: the main effect of Covid-19 was not significant (t=0.690, p=.497), the main effect of the moderator number of participants included in the studies was not significant (t=-1.685, p=.105) and the interaction effect between number of included participants and Covid-19 was also not significant (t=-0.913, p=.370).

Figure 2

Forest Plot



Discussion

The aim of this research was to investigate the relation between the prevalence rates of psychological intimate partner violence and Covid-19 periods. The heterogeneity of the meta-analysis is significant: Therefore, the included studies significantly vary in their data. This variation can be explained by the difference in data of the included studies, as there are several differences in age, number of included participants or percentage of female victims.

The results show that there is no significant relation between Covid-19 periods and psychological IPV prevalence rates. Hence, the hypothesis that psychological IPV increases during periods of Covid-19 is not confirmed. This is contrary to what was expected from prior research. The research of Barbara et al. (2020), found that in several countries the prevalence rates of IPV have increased during periods of Covid-19. This increase was also reported in the research of Agüero (2021), who indicated a 64 percent increase of IPV during Covid-19 periods, by examining phone calls to helplines.

Although no relation between Covid-19 periods and psychological IPV prevalence rates was found, the results of this study imply that the overall prevalence rate of psychological IPV before Covid-19 is around 40 percent, which can be seen in the forest plot (figure 2). This is more

than the World Health Organization (2021) indicated. Hence even though no effect of Covid-19 periods on psychological IPV prevalence rates was found, it shows that the rates of psychological IPV before Covid-19 is higher than indicated.

In addition, several linear regression analyses were performed, to examine whether moderators exist, which influence the effect of Covid-19 periods on psychological IPV prevalence rates. One factor, which is shown above by the study of Rivara et al. (2009) to be influential on IPV prevalence is the age of the victim. Therefore, it was examined whether the age of the participants of the included studies moderates the effect of Covid-19 on psychological IPV prevalence rates. In contrast to the above-mentioned research of Rivara et al. (2009), the participants age did not moderate the effect of Covid-19 periods on psychological IPV prevalence rates.

As well as the age of the participants, it was examined whether the percentage of female participants of the included studies influences the effect of Covid-19 periods on psychological IPV prevalence rates. As IPV victims are more often female than male (Cho et al., 2020), it was relevant to see whether the percentage of females would moderate the effect of Covid-19 periods on psychological IPV prevalence rates. The results of the analysis show that the percentage of female participants does not influence the effect of Covid-19 periods on psychological IPV prevalence rates.

In addition, it was examined whether the country where the research was conducted would moderate the effect of Covid-19 periods on psychological prevalence rates. The research of Barbara et al. (2020), indicates that IPV prevalence rates differ between countries. The study further indicates that in specific countries, IPV has increased during periods of Covid-19. Therefore, it was relevant to check whether the country could influence the effect of Covid-19 periods on psychological IPV prevalence rates. The result of this study differs from the study of Barbara et al. (2020), as no moderation effect of the country where the study was conducted was found. Lastly, it was investigated whether the total number of participants used in the included articles would moderate the prevalence rates of psychological IPV during Covid-19 periods. The results show that the number of included participants of the researches did not moderate the effect of Covid-19 periods on psychological IPV prevalence rates.

Additionally, there are some limitations of the study. The first limitation can be found in the number of articles included, as 28 articles concerning psychological IPV were used in the final analysis. Of the 28 articles used, six articles were examining psychological IPV prevalence

rates during Covid-19 periods. This results in 22 studies reporting on psychological IPV prevalence rates before Covid-19 periods and six studies during Covid-19 periods. Therefore, there is a discrepancy between the two groups (before Covid-19 and during Covid-19). This discrepancy could influence the finding of no effect of the meta-analysis, as well as the insignificant findings of the moderation analysis. Nevertheless, as the Covid-19 pandemic is a scientifically recent occurrence, it is possible that future meta-analysis can ensure a larger and more equally distributed sample of included studies.

Another limitation of this research regards the age of the participants of the included studies. This research only included studies with participants older than 18, due to our western standard of adulthood. However, some articles have shown that participants by the age of 15 are seen to be adults in other cultures, who also experience IPV (Peterman et al., 2015). Due to the inclusion and exclusion criteria, several studies with participants younger than 18 were excluded. By including studies with participants, who are regarded as adults, regardless of being younger than 18, future research could find more information on the effect of Covid-19 periods on psychological IPV prevalence rates.

Additionally, the research was limited by missing data from the included studies. This is especially relevant for the variable age, as 14 studies did not report on the average age of their participants (table 1). This influences the moderation analysis for the participants age of the included studies, as only half of the overall included studies reported the average age. Therefore, this could explain why no moderation effect of the participants age on the effect of Covid-19 periods on psychological IPV prevalence rates was found.

Furthermore, a limitation of this research is that the socioeconomic status of the various study participants was not included in this meta-analysis, as most studies did not include the status in their research. However, it is shown that the socioeconomic status, such as education and employment, has an effect on various forms of violence and also IPV (Field & Caetano, 2004). Moreover, the study of Orr et al. (2021), supports the effect of the socioeconomic status on IPV prevalence rates, as they found an increase of IPV prevalence rates, due to race of the participants. Hence, it is important for future research to include socioeconomic status, as this might moderate the effect of Covid-19 periods on IPV prevalence rates as well.

Another limitation is that a lot of researches had to be discarded, due to a different definition of IPV. It might be possible that the definition of this meta-analysis was too specific and therefore a lot of potentially beneficial studies had to be discarded. Future research should

therefore include a broader or more inclusive definition of IPV in order to include and process more relevant research. The research is furthermore limited by the different sample sizes of the included studies, which as mentioned above, vary a lot. Therefore, an exclusion criterion, which aims to exclude studies with small sample sizes could be beneficial by excluding insignificant studies and thereby potentially increase IPV prevalence rates.

A final limitation of this meta-analysis is the procedure how the gathered scientific papers were checked on IPV. As this was done manually by the four researchers by individually checking around 41.000 papers first by abstracts and titles and later on in detail, it can be assumed that some mistakes have been made. A better option might have been the use of a program, which processed the scientific papers more reliable.

Even though the results show no significant increase of psychological IPV during Covid-19 periods, the research provides implications for future research. To begin with, this research found a prevalence rate of psychological IPV before Covid-19 close to 40 percent. This implies that the prevalence rate of psychological IPV is higher than the reported prevalence rate in prior research. Therefore, future research should investigate whether IPV prevalence rates are higher than expected.

Moreover, several limitations can be found in this research, which provide, as discussed above, implications for future research. Additionally, future research could focus on lockdown regulations during Covid-19 periods, as they could have hindered IPV victims from seeking help. Due to the strict stay at home and social distancing policy, IPV victims might have been unable to go out to seek help. Moreover, it is possible that while staying at home reaching out by phone might have been impossible, due to the perpetrator also being at home because of the regulations. This inability to escape and the isolation with the perpetrator was suggested by Peterman et al. (2020). Hence it might be interesting for future research to examine whether IPV victims were unable to seek help during Covid-19 periods, which could also explain the findings of this research. Therefore, further research is necessary to focus on the IPV prevalence rates before Covid-19 and the consequences of the lockdown regulations of Covid-19 periods with regard to IPV.

To conclude, this meta-analysis found no increase in psychological IPV prevalence rates during periods of Covid-19. Considering these results, future research should focus on a broader defined inclusion criteria to incorporate more potentially relevant studies and end up with a larger sample of included studies. This can be achieved among others by using a broader definition of

psychological IPV, which could yield a larger sample of included studies. Additionally, it might be beneficial to include articles, with underage participants, who are in their cultural context seen as adults. It is nevertheless important to further investigate the potential effects of Covid-19 periods on IPV prevalence rates. Especially psychological IPV, as victims of IPV can be isolated, due to lockdown regulations, which confronts them with additional difficulties to seek help. Moreover, as mentioned above, research implies that IPV most likely results in several negative consequences, ranging from less serious impairments on daily functioning, to decreased psychological and physical wellbeing.

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