BMJ Open

Factors associated with domestic violence among women of reproductive age (15-49 years) in Quetta, Balochistan- A mix-method study.

Journal:	*BMJ Open*
Manuscript ID	bmjopen-2021-057299
Article Type:	Protocol
Date Submitted by the Author:	13-Sep-2021
Complete List of Authors:	Soomar, Salman; The Aga Khan University, Emergency services Soomar, Sarmad; The Aga Khan University, School of Nursing and Midwifery
Keywords:	PUBLIC HEALTH, QUALITATIVE RESEARCH, EPIDEMIOLOGY

RESEARCH PROTOCOL

Factors associated with domestic violence among women of reproductive age (15-49 years) in Quetta, Balochistan- A mix-method protocol.

Salman Muhammad Soomar[1], Sarmad Muhammad Soomar[1]

[1]Aga Khan University, Karachi Pakistan

Corresponding Author

Mr. Salman Muhammad Soomar, MSc, Research Fellow Centre for Excellence in Trauma and Injury, Aga Khan University, Karachi Pakistan. salman.soomar@aku.edu

Co-Author

Mr. Sarmad Muhammad Soomar, MSc, Clinical Preceptor (Community Health) School of Nursing and Midwifery, Aga Khan University, Karachi Pakistan. sarmad.soomar@aku.edu

ABSTRACT

Background

Domestic Violence is a worldwide epidemic. An estimated 30% of women experience physical and sexual violence during their lifetime globally. Worldwide, domestic violence is a cause of death and disability among women aged 15–49 years. In Pakistan, domestic violence appeared in different forms, and only 3.2% of women report any domestic violence. There are different factors associated with DV against Women. The data is sparse for the Balochistan province due to the under-reporting and scattered population.

Aim (s)

To determine the factors associated with domestic violence and the types of violence, among women of reproductive age. And to understand the perspective of community leaders and HCWs for developing preventable strategies for domestic violence against women of reproductive age at Quetta Balochistan.

Methods

A sequential explanatory mix method (quantitative study followed with qualitative) study design will be used to fulfill the objectives of the study. Women of reproductive age 15 to 49 years both married and unmarried, local residents, community leaders, and community health care workers of Quetta Balochistan, will be made part of the study. A structured questionnaire will be used to identify associated factors with domestic violence and type of violence among women of reproductive age and focused group discussions using a semi-structured guide will for the data collection. The multivariable logistic regression analysis will be performed for the quantitative part. P-value ≤ 0.05 will be considered significant. Qualitative data will be transcribed i.e., the data

collected from focus groups discussion to develop recurrent themes/sub-themes related to perspective and opinion regarding the prevention of DV.

Results

NA

Conclusion

The findings from this research will help different sectors to develop the interventions and government to plan and strategize strict laws and policies to control or end the violence against women in Pakistan.

Keywords: Domestic Violence, Women, Reproductive Age, Factors, Prevention

Strength and Limitations

- This is the first-ever community-based study to be conducted in Balochistan, Pakistan to understand both factors associated with domestic violence and the perspective to prevent it.
- This is also the first-ever study to include community leaders and health care workers because they have more ideas regarding the community problems.
- A large sample size with a multi-cluster sampling strategy is used to collect data from the women of reproductive age from the major capital city of the Balochistan province.
- Certain biases associated with the study such as recall and wish bias and generalizability will be limited to women of reproductive age.

INTRODUCTION

Domestic Violence (DV) is a worldwide epidemic. An estimated 30% of women experience physical and sexual violence during their lifetime globally (1). Domestic violence includes violence perpetrated by a family member or intimate partner towards another adult (2). Much of the current international evidence focuses on intimate partner violence (IPV), a subset of DV.

DV may be a single incident or pattern of incidents that can take multiple forms, including physical, sexual, psychological, emotional, financial, and control violence (2).

It is a severe violation of human rights and recognized as a significant public health issue. Worldwide, domestic violence is a cause of death and disability among women aged 15–49 years (3) In addition to causing injury, violence increases women's long-term risks of several other health problems, including physical and mental health issues (3, 4). Abused women are two time more likely to have medical visits, 8-fold more like to seek mental healthcare, and an increased rate of hospitalization than non-abused women (3)

The reported lifetime prevalence of physical or sexual violence, or both, varied from 15% to71% among the world's different countries (5, 6). The prevalence was highest in the WHO African, Eastern Mediterranean, and South-East Asia Regions (30) approximately 37% of ever-partnered women reported physical and sexual and IPV at some point in their lives (7-9). In the American region they reported the next highest prevalence with approximately 30% of women reporting lifetime exposure (10). Prevalence was lower in the high-income region, 23%, and in the European and the Western Pacific Regions, where 25% of ever-partnered women reported lifetime intimate partner violence experience (11). During the COVID-19 pandemic, there a considerable increase

was seen in the DV and IPV cases globally according to the WHO there were an increase of 50% to 60% of cases based on survivor calls for help to women organization hotlines (30)

In Pakistan, domestic violence appeared in different forms, and only 3.2% of women report any domestic violence (14) In rural areas of Pakistan, the prevalence of physical violence against women was 56% (15) In contrast, in urban settings, the lifetime prevalence is 57.6% physical, 54.5% sexual, and 83.6% psychological abuse (12-14).

There are different factors associated with DV against Women. There is still gender discrimination in many cultures due to sociocultural influences, including unequal access of women to health services, the unequal status of gender relations, emphasis on women's primary reproduction responsibilities, lower educational level, and unequal job opportunities (15) Other than these factors, women's power dynamics, patriarchy, low socio-economic status, and substance abuse by a partner or family male were essential factors associated with DV against women (15-17). Infertility in women is also a major reason for violence against women in different parts of the World (18, 19). Moreover, research has indicated that there has been violence during pregnancy (22) The reasons for violence in pregnant women are that partner's alcohol misuse, jealousy, stress, and unemployment, might be risk factors of DV during pregnancy (20, 21).

While confirming that physical and sexual partner violence against women is widespread, the variation in prevalence between different regions emphasizes that this violence is not unavoidable and needs to be addressed.

RATIONALE

Understanding violence against women is as complex as its process. Literature shows that most of the justifications were contextually and culturally based but there are other reasons for such acts

which are unreported. Most of the factors related to violence against women are common for Pakistan as well. Available in Pakistan demographic survey 2017-2018. However, the data are not available for the violence, such as domestic violence, intimate partner violence and fundamental factors are unknown especially in Balochistan. The data is sparse for the Balochistan province due to the under-reporting and scattered population. Balochistan's literacy rate is below 50% compared to other regions of Pakistan (28). The people of Balochistan follow strict sociocultural norms like not allowing women to go outside home for education and doing jobs, there is gender discrimination and male dominance (22). Not much is documented about violence in women from this part of the country. This study aims to identify the associated factors of the DV and to determine the type of violence used i.e., physical, verbal, emotional and psychological violence against women of reproductive age in Quetta Balochistan, Pakistan. The study will document the factors and types of domestic violence from this conservative area which will pave the way for future studies and interventions in Pakistan.

OBJECTIVES

Primary:

To determine the factors associated with domestic violence, among women of reproductive age at Quetta Balochistan.

To determine the types of violence, among women of reproductive age at Quetta Balochistan.

Secondary:

To understand the perspective of community leaders and HCWs for developing preventable strategies for domestic violence against women of reproductive age at Quetta Balochistan.

HYPOTHESIS

The odds of domestic violence among non-married women of reproductive age (both ever married and never married) group are 2 times greater compared to married women of reproductive age groups.

The odds of domestic violence based on factor such as illiteracy, unmarried status and age above 25 years increase 2 time more in women as compared to those who do face domestic violence.

METHODS

STUDY DESIGN

A sequential explanatory mix method (quantitative study followed with qualitative) study design will be used to fulfill the objectives of the study. A cross-sectional study design will be used to identify associated factors with domestic violence and type of violence among women of reproductive age in Quetta, Balochistan using a structured questionnaire followed with a qualitive focused group discussions (FGDs) with community leaders and community health care workers (HCWs) to understand their perspective on domestic violence and developed preventable measure to stop it.

STUDY SETTING AND STUDY SITE

It will be conducted in district Quetta, Baluchistan which is the provincial capital of Balochistan. It has 2 Tehsils i.e., Chiltan and Zarghoon. These tehsils are further constituted of 50 Union councils. The total population of the district is 2.5 million and there are 263143 households in the district. The district is predominantly inhabited by Baloch and Pashtuns with segments of Hazara and Punjabis. (Pakistan Bureau of Statistics, Census 2017).

STUDY PARTICIPANTS

For quantitative section study participants will be women of reproductive age 15 to 49 years both married and unmarried resident of Quetta Balochistan, will be made part of the study. For qualitative component community leaders and community health care workers of Quetta Balochistan.

STUDY DURATION

This study will take place from December 1, 2021, to November 30, 2022. The study duration will be 12 months.

ELIGIBILITY CRITERIA

INCLUSION CRITERIA

All women of reproductive age (15 to 49 years), both ever married and never married. A resident of the Quetta for at least 5 years (will be confirmed through CNIC) and give consent to participate in the study.

Community leaders and community health care workers of Quetta Balochistan willing to participate in the study and give informed written consent.

EXCLUSION CRITERIA

Women who are mentally retarded, have cognitive impairment and living alone will be excluded from the study. Women of non-reproductive age (<15 to >49 years). Those who refuse to participate or not give consent.

SAMPLING STRATEGY

We will use a two-stage sampling design; first will select 1500 households from the list of households taken from health department government of Balochistan. This selection of households

in each UC will be done by randomizer through computer generated list of all households in the UC. Once the households are selected then data collectors will visit the selected households for data collection. A single woman from each household will be selected randomly for data collection in each household if the randomized woman doesn't provide informed consent the next woman in the same household will be approached and if all the women of reproductive age in the randomly selected household refuses to provide data the adjacent household will be selected for data collection.

SAMPLE SIZE

For the quantitative part the sample size was calculated using the factors associated with domestic violence in women of reproductive age in Quetta, Pakistan in this regard the different factors i.e., number of reasons for which wife beating is justified, women afraid of husband and spouse education were identified from the literature (14,23). The proportion of all these factors varied in the literature, level of spouse education with exposed 33.8% and Unexposed 26.2% to number of reasons for which wife beating is justified with exposed 29.3% to unexposed 39.23% (13,14,23,25,26). Considering the proportion to gather with 80% power, 95% confidence interval and 1:1 of unexposed to exposed in sample, the estimated sample size came out to be 367. By considering the design effect of 2 that occurs for using multistage cluster sampling, the required sample size came out to be 734.

The formula and calculation are as follow:

$n = [Z2\ a/2\ (pq)] + B2 * \text{Design effect}$

Where,

$Z2\ (a/2) = (1.96 \text{ at } 95\% \text{ CI})$

p=Proportion of domestic violence 0.5

q= Proportion of no domestic violence 1-0.5= 0.5

B2= Bound on error (0.05)2

Design effect = 2

The final sample size adjusting to cluster effect came to be (367*2) = 734

With inclusion of 5% non-response and missing data, the final sample size came to be 770 dyads.

In the qualitative part, two FGDs will be conducted one with community leaders and other with community health care workers a maximum of 12 participants will be required for that process.

DATA COLLECTION PROCEDURE:

For the quantitative data, data collectors will be visiting the randomly selected houses. Data collectors will be female psychology students or nursing students considering the sensitivity of the topic. For security reasons male field supervisors will be allotted with data collectors' team to communicate with the community and lead the data collection process. Women will be screened for eligibility and enrolled after taking written informed consent. A study ID of will be assigned to her. Data collectors will be collecting demographic data and specific questions related to DV will be asked. During the data collection process, privacy and confidentiality will be maintained. The data will be collected using a standard questionnaire (PDHS-Domestic violence module). At the end of interview, data collectors check the questionnaire for errors, inconsistencies, and missing values before leaving the house. If there is no woman of reproductive age living in the house or locked houses, next house will be approached.

The FGDs will be conducted in the next process to understand the perspective of community leaders and HCWs regarding the domestic violence and its prevention strategies. A semi structured guide will be used for this purpose.

DATA MANAGEMENT

The quantitative data will be collected using Epidata software 3.1. A data entry operator will enter the data. Every form has a unique participant identification (ID) to avoid duplication. PI will check 10% randomly selected questionnaires for errors, inconsistencies, and missing values. After data entry, the entered data will be password protected. Also, backup files for electronic data will be maintained to prevent loss of data. For qualitative data All the interviews will be audio recorded with the permission of participants, which will be transcribed and translated for themes/sub-themes development.

DATA COLLECTION TOOL

For the quantitative data collection Demographic Health Survey (DHS) Domestic violence tool will be used to collect the data from participants. For basic information of the participants a questionnaire will be developed. The reliability of the tool was 0.9 calculated using Cronbach's alpha. The qualitative tool will be developed for FGD which will have questions regarding the perception of community leaders and HCWs to address the issue and develop strategies to prevent DV.

STUDY VARIABLES

OUTCOME VARIABLE

Domestic violence according to WHO violence is define as the intentional use of physical force and power , threatened or actual, against oneself, another person, or against oneself, another person or against a group or community that either result in or has a high likelihood of resulting in injury, death, psychological harm, mal development and deprivation and the act of this violence in domestic setting is called domestic violence) against women of reproductive age both married & unmarried, resident of Quetta, Balochistan. This variable will be binary violence against women Yes/No.

Factor associated with domestic violence like educated or uneducated, if educated then what is the level of education, primary, secondary, or higher-level economic status means lower class, middle class and or upper class, ethnicity Pashtun, Baloch or Hazara.

MEASUREMENT OF VIOLENCE

PDHS 2017-18 domestic violence tool will be used, information will be obtained from both married and unmarried women on their experience of violence, committed by their current and former husbands and by others. More specifically, violence committed by the current husband (for currently married women) and by the most recent husband (for formerly married women). There will be three specific domains with operational definition.

Physical spousal violence: push you, shake you, or throw something at you; slap you; twist your arm or pull your hair; punch you with his fist or with something that could hurt you; kick you, drag you, or beat you up; try to choke you or burn you on purpose; or threaten or attack you with a knife, gun, or any other weapon.

***Emotional spousal violence*:** say or do something to humiliate you in front of others, threaten to hurt or harm you or someone close to you, or insult you or make you feel bad about yourself.

COVARITIES

Different factors are associated with domestic violence against women, the individual factors that will be assessed are like women's age at the time of survey, ethnicity, like Pashtun, Baloch , Hazara women's highest level of education, primary, secondary graduate, postgraduate women's occupation, housewife ,teacher, working in health sector Husband/Partner's age, Husband's highest level of education, types of occupation of the participant and partner, type of family nuclear , joint family total number of family members of the victim or participant , total number of children, of the participant, years of Marriage of the participant , monthly family income, of the participant in rupees geographic location of the participant and substance abuse. like drugs abuse, cocaine abuse, antidepressant, marijuana

A-PRIORI CONFOUNDERS

Age of the participant, level of education, occupation and geographical location are categorized as a-priori confounders in this research (27).

Qualitative covariates will be perspective and opinion of community leaders and HCWs for developing potential strategies for preventing domestic violence against women.

PLAN OF STATISTICAL ANALYSIS

Mean ±SD will be calculated for all normally distributed continuous variables for example age of subjects. Frequencies and percentages will be computed for all qualitative variables.

The outcome or dependent variable of the study is binary therefore binary logistic regression will be used. The univariate analysis will be done to know the individual effect of the independent variable when regressed against the domestic violence. P-value is less than or equal to 0.25 will

be considered significant. Those variables that are not significant will be removed after this process.

A stepwise approach will be used for multivariable analysis. Multicollinearity will be checked between all the variables before multivariable analysis. Multicollinearity will be assessed through different tests. After exploring Multicollinearity, the multivariable analysis will be performed. Variables that will be significant at univariate level will be added one after another in the model based on P-value less than or equal to 0.05 is the cut off for the significance of multivariable analysis. Biological plausible interaction between variables will also be assessed in the main model. If there is no interaction found between variables than we will check for confounders. STATA version 17 will be used for the analysis.

Qualitative data will be transcribed i.e., the data collected from focus groups discussion, and two independent coders will review the transcript and develop a codebook from the responses. A qualitative content analysis using Atlas.it software (Berlin, Germany) will be performed to identify recurrent themes/sub-themes related to perspective and opinion regarding the prevention of DV.

LIMITATIONS AND VALIDITY

INTERNAL VALIDITY

The study has few biases which are addressed at both designs and will be addressed in the analysis phase.

RECALL BIAS

Some of the questions required the participant to recall especially related to domestic/intimate partner or gender-based violence that happened in the past, there will be possible to recall issues.

WISH BIAS

There are certain questions in the questionnaire which can produce wish bias if a participant tries to hide certain information related to personal information or violence. To address this bias questionnaire is designed in such a way that these questions will be asked less sensitively. However, the possibility of wish bias cannot be excluded.

EXTERNAL VALIDITY

The results will be generalized to women of reproductive age (15-49 years). The factors may be different in different settings like social, cultural and religion norms.

ETHICAL CONSIDERATIONS AND APPROVAL

The approval for the study was obtained from Aga Khan University's Ethical Review Committee (ERC Ref # 6114). The data collectors will be given proper training on ethical consideration and sensitivity of the topic before beginning with the interview process. A proper process for the data collection will be followed to comply with ethical considerations. The complete data collection process including consent will be taken in separate room or place. Data collection will be done in close doors at the participant home, if participant will not be comfortable, she will be called with her and house head permission at separate place like community hall, community head's house, lady health visitor (LHV) clinic or Basic Health Units (BHUs). There will be no force on data collection if she or her husband or house head refuse to give permission. Data collectors will be properly trained to handle any unwanted situations, they will be given a proper counselling training especially during emotional breakdowns and situations to empathize the participant. Data collectors will be females either Nurses, LHVs or Psychology students and should have the proper experience to provide emotional support and comfort. Furthermore, during the process of data

collection, the participant's name will be kept anonymous to ensure anonymity and confidentiality. All participants will be given complete information about the study and only after that, they will provide their consent which shall be voluntary. Participants will also be informed that they can discontinue the interview process at any point during the interview without facing any consequences. Before going to ask sensitive question related to the study once again permission will be granted from the participant, the collected data will be protected, and access will be only given to primary investigators. Participants will also be referred to appropriate counseling and assistance as per need and requirement.

REFERRALS FOR DOMESTIC VIOLENCE VICTIMS

Participants who will need the medical attention or having any adverse health consequences due to violence will be referred to Non-governmental Organization (NGOs) or health facilities for the proper counselling and medical help. Prior to the study such organizations will be identified and listed for the referral in Quetta. This study will not bring any direct benefit to the participants, however those who would ask for help and who do not will be provided with NGOs, phone numbers and hospital contacts to seek help in case they need it.

PUBLIC HEALTH IMPLICATION

Violence against women is increasingly seen as a public health problem globally. This will help in the fulfilling research gaps for associated factors with domestic violence against women in Quetta. The findings from this research will help different sectors to develop the interventions and government to plan and strategize strict laws and policies to control or end the violence against women in Pakistan. Moreover, this will generate evidence through numbers for further

understanding of cause and reasons of violence and will be pioneer for violence research in Quetta Balochistan.

PATIENT AND PUBLIC INVOLVEMENT

Study protocol- No patient involved

ABBREVIATIONS

DHS: Demographic Health Survey

DV: Domestic Violence

FGD: Focus Group Discussion

HCW: Health Care Worker

NGOs: Non-governmental Organizations

Declaration

Consent for publication

Not Applicable

Availability of data and materials

Data and materials are available to the corresponding author, which can be shared at a reasonable request.

Competing interests

The authors declare no competing interest.

Funding

Not Applicable

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28 The province-wise literacy rate in Pakistan and its impact on the economy

Author links open overlay panelAbdulRehmanaLuanJingdongaImranHussainb

14-Jul-2021

Mr. Salman Muhammad Soomar
Department of Community Health Sciences
Aga Khan University
Karachi

Dear Mr. Salman Muhammad Soomar,

2021-6114-18575. Factors associated with domestic violence among women of reproductive age (15-49 years) in Quetta, Balochistan- A mix method study

Thank you for submitting your application for ethical approval regarding the above-mentioned study.

Your study was reviewed and discussed in ERC meeting. There were no major ethical issues. The study was given an approval for a period of one year with effect from 14-Jul-2021. For further extension a request must be submitted along with the annual report.

List of document(s) approved with this submission.

Submission Document Name	Submission Document Date	Submission Document Version
English DHS domestic violence tool	29-Mar-2021	1.0
Scanned Documents NOC From DC Quetta	05-May-2021	1.0
Authorization Letter - HK	05-May-2021	1.0
Affidavit for Translation-converted	05-May-2021	1.0
Urdu-DHS-domestic-violence-tool	19-May-2021	1.1
Urdu-Screening-and-Baseline-Questionnaire (2)	19-May-2021	1.1
Balochi DHS domestic violence tool	19-May-2021	1.1
Balochi Screening and Baseline Questionnaire	19-May-2021	1.1
English Screening and Baseline Questionnaire	19-May-2021	1.0
Parental consent form in English-converted	12-Jun-2021	1.3
Pashto parental	12-Jun-2021	1.3
Pashto screening and baseline questionnaire	12-Jun-2021	1.3
Pashto DHS domestic violence tool new (1)	12-Jun-2021	1.3
Informed Consent in English-converted	12-Jun-2021	1.3

Assent form in English-converted	12-Jun-2021	1.3
Pashto informed	12-Jun-2021	1.3
Pashto assent	12-Jun-2021	1.3
Balochi assent edited	12-Jun-2021	1.3
Balochi informed	12-Jun-2021	1.3
Balochi parental	12-Jun-2021	1.3
Urdu informed (1)	12-Jun-2021	1.3
Urdu assent edited (1)	12-Jun-2021	1.3
Urdu parental (1)	12-Jun-2021	1.3
Protocol version 1.3 12072021	12-Jul-2021	1.3
Response to ERC comments	12-Jul-2021	1.0

Any changes in the protocol or extension in the period of study should be notified to the Committee for prior approval. All informed consents should be retained for future reference.

Please ensure that all the national and institutional requirements are met.

Thank you.

Sincerely,

Dr. Hammad Ather

Chairperson
Ethics Review Committee

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Journal:	*BMJ Open*
Manuscript ID	bmjopen-2021-057299.R1
Article Type:	Protocol
Date Submitted by the Author:	21-Feb-2022
Complete List of Authors:	Soomar, Salman; The Aga Khan University, Emergency services Soomar, Sarmad; The Aga Khan University, School of Nursing and Midwifery
Primary Subject Heading:	Public health
Secondary Subject Heading:	Qualitative research, Sexual health, Health services research, Epidemiology
Keywords:	PUBLIC HEALTH, QUALITATIVE RESEARCH, EPIDEMIOLOGY

RESEARCH PROTOCOL

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Salman Muhammad Soomar[1], Sarmad Muhammad Soomar[1]

[1]Aga Khan University, Karachi Pakistan

Corresponding Author

Mr. Salman Muhammad Soomar, MSc, Research Fellow Department of Emergency Medicine, Aga Khan University, Karachi, Pakistan. salman.soomar@aku.edu

Co-Authors

Mr. Sarmad Muhammad Soomar, MSc, Clinical Preceptor (Community Health) School of Nursing and Midwifery, Aga Khan University, Karachi Pakistan. sarmad.soomar@aku.edu

ABSTRACT

Background

Worldwide, domestic violence is a cause of death and disability among women aged 15–49 years. In Pakistan, domestic violence appears in different forms, and only 3.2% of women report any domestic violence. There are various factors associated with DV against Women. The data is sparse for the Balochistan province due to the under-reporting and scattered population. The aim of the research study is to determine the factors associated with domestic violence and the types of violence among women of reproductive age. Moreover, to understand the perspective of community leaders and HCWs for developing prevention of domestic violence against women of reproductive age at Quetta Balochistan.

Methods and analysis

A sequential explanatory mix method (quantitative study followed with qualitative) study design will be used to fulfill the study's objectives. Women of reproductive age 15 to 49 years, both married and unmarried, local residents, community leaders, and community health care workers of Quetta Balochistan, will be made part of the study. A structured questionnaire will be used as the quantitative tool. . Focus group discussions using a semi-structured guide will provide for the data collection. The multivariable logistic regression analysis will be performed for the quantitative part. P-value ≤ 0.05 will be considered significant. In qualitative part data will be transcribed and recurrent themes/sub-themes will be developed understanding the perspective and opinion regarding DV prevention.

Ethics and dissemination

Ethical Approval was taken from Ethical Review Committee, Aga Khan University, Karachi Pakistan. Informed written consent will be obtained from participants above 18 and assesnt with parental consent from below 18 years old.

Keywords: Domestic Violence, Women, Reproductive Age, Factors, Prevention

Strength and Limitations

- This is the first-ever community-based study to be conducted in Balochistan, Pakistan to understand both factors associated with domestic violence and the perspective to prevent it.
- This is also the first-ever study to include community leaders and health care workers because they have more ideas regarding the community problems.
- A large sample size with a multi-cluster sampling strategy is used to collect data from the women of reproductive age from the major capital city of the Balochistan province.
- Certain biases associated with the study such as recall and wish bias and generalizability will be limited to women of reproductive age.

INTRODUCTION

Domestic Violence (DV) is a worldwide epidemic. An estimated 30% of women experience physical and sexual violence during their lifetime globally (1). Domestic violence includes violence perpetrated by a family member or intimate partner towards another adult (2). Much of the current international evidence focuses on intimate partner violence (IPV), a subset of DV.

DV may be a single incident or pattern of incidents that can take multiple forms, including physical, sexual, psychological, emotional, financial, and control Violence.

It is a severe violation of human rights and is a significant public health issue. Worldwide, domestic violence is a cause of death and disability among women aged 15–49 years (3). In addition to causing injury, violence increases women's long-term risks of several other health problems, including physical and mental health issues (2, 3). Abused women are two times more likely to have medical visits, 8-fold more like to seek mental healthcare, and an increased rate of hospitalization than non-abused women (3)

The reported lifetime prevalence of physical or sexual violence, or both, varied from 15% to71% among the world's different countries (4, 5). The prevalence was highest in the WHO African, Eastern Mediterranean, and South-East Asia Regions (6). Approximately 37% of ever-partnered women reported physical and sexual and IPV at some point in their lives (6-8). ,They reported the subsequent highest prevalence in the American area, with approximately 30% of women reporting lifetime exposure (9). Prevalence was lower in the high-income region, 23%, and in the European and the Western Pacific Regions, where 25% of ever-partnered women reported lifetime intimate partner violence experience (10). During the COVID-19 pandemic, a considerable increase was seen in the DV and IPV cases globally. According to the WHO, there were a rise of 50% to 60% of cases based on survivor calls for help to women organization hotlines (11)

Domestic violence appeared in various forms in Pakistan, and only 3.2% of women report domestic violence (12). In rural areas of Pakistan, the prevalence of physical violence against women was 56% (13). In contrast, the lifetime prevalence in urban environments is 57.6% physical, 54.5% sexual, and 83.6% psychological abuse (14-16).

There are different factors associated with DV against Women. There is still gender discrimination in many cultures due to sociocultural influences, including unequal access of women to health services, the unequal status of gender relations, emphasis on women's primary reproduction responsibilities, lower educational level, and unequal job opportunities (15). Other than these factors, women's power dynamics, patriarchy, low socio-economic status, and substance abuse by a partner or family male were essential factors associated with DV against women (12, 13, 17). Infertility in women is also a significantreason for violence against women in different parts of the World (18, 19). Moreover, research has indicated that there has been violence during pregnancy (20). The reasons for violence in pregnant women are that partner's alcohol misuse, jealousy, stress, and unemployment, which might be risk factors of DV during pregnancy (21, 22).

While confirming that physical and sexual partner violence against women is widespread, the variation in prevalence between different regions emphasizes that this violence is not unavoidable and needs to be addressed.

RATIONALE

Understanding violence against women is as complex as its process. Literature shows that most of the justifications were contextually and culturally based, but there are other reasons for such acts unreported. Most of the factors related to violence against women are common for Pakistan. Available in Pakistan demographic survey 2017-2018. However, the data are not available for the violence, such as domestic violence, intimate partner violence, and fundamental factors are unknown, especially in Balochistan. The data is sparse for the Balochistan province due to the under-reporting and scattered population. Balochistan's literacy rate is below 50% compared to other regions of Pakistan (23). The people of Balochistan follow strict sociocultural norms like not allowing women to go outside the home for education and doing jobs, and there is gender

discrimination and male dominance (24). Not much is documented about violence in women from this part of the country. This study aims to identify the DV's associated factors and determine the type of violence used, i.e., physical, verbal, emotional, and psychological violence against women of reproductive age in Quetta Balochistan, Pakistan. The study will document the factors and types of domestic violence from this conservative area which will pave the way for future studies and interventions in Pakistan.

OBJECTIVES

Primary:

To determine the factors associated with domestic violence among women of reproductive age at Quetta Balochistan.

To determine the types of violence among women of reproductive age at Quetta Balochistan.

Secondary:

To understand the perspective of community leaders and HCWs for developing preventable strategies for domestic violence against women of reproductive age at Quetta Balochistan.

HYPOTHESIS

The odds of domestic violence among non-married women of reproductive age (both ever married and never married) group will be higher than married women of reproductive age groups.

METHODS

STUDY DESIGN

A sequential explanatory mix method (quantitative study followed with qualitative) study design will be used to fulfill the study's objectives. A cross-sectional study design will be used to identify

associated factors with domestic violence and type of violence among women of reproductive age in Quetta, Balochistan, using a structured questionnaire followed with phenomenological approach as we will be knowing the lived experiences. Focused group discussion (FGDs) with community leaders and community health care workers (HCWs) to understand their perspective on domestic violence and developed a preventable measure to stop it.

STUDY SETTING AND STUDY SITE

It will be conducted in district Quetta, Baluchistan, the provincial capital of Balochistan. It has 2 Tehsils i.e., Chiltan and Zarghoon. These tehsils are further constituted of 50 Union councils. The district's total populationdistrict's total population is 2.5 million, and there are 263143 households in the district. Baloch, and Pashtuns inhabit the community with segments of Hazara and Punjabis. (Pakistan Bureau of Statistics, Census 2017).

STUDY PARTICIPANTS

For the quantitative section, study participants will be women of reproductive age 15 to 49 years, both married and unmarried residents of Quetta Balochistan, and will be part of the study. For qualitative component community leaders and community health care workers of Quetta Balochistan.

STUDY DURATION

This study is planned to start from December April 1, 20221, and the expected end date will be November 30, 2022. The study duration will be 7 months.

ELIGIBILITY CRITERIA

All women of reproductive age (15 to 49 years), both ever married and never married. A resident of the Quetta for at least five years (will be confirmed through CNIC)

Community leaders and community health care workers of Quetta Balochistan are willing to participate in the study and give informed written consent.

do **SAMPLING STRATEGY**

We will use a two-stage sampling design; first will select households from the list taken from the health department government of Balochistan. This selection of households in each UC will be madmade by randomizer through computer-generated list of all households in the UC. Once the households are selected, data collectors will visit the selectedfamilies for data collection. A single woman from each home will be selected randomly for data collection in each household if the randomized woman doesn't provide informed consent, the next woman in the same household will be approached, and if all the women of reproductive age in the randomly selected household refuse to provide data, the adjacent household will be selected for data collection. For qualitative part non-probability purposive sampling strategy will be used.

SAMPLE SIZE

For the quantitative part, the sample size was calculated using the factors associated with domestic violence in women of reproductive age in Quetta, Pakistan in this regard, the different factors, i.e., number of reasons for which wife-beating is justified, women afraid of husband and spouse education were identified from the literature (14,23). The proportion of all these factors varied in the literature, level of spouse education with exposed 33.8% and Unexposed 26.2% to the number of reasons for which wife beating is justified with exposed 29.3% to unexposed 39.23% (13,14,23,25,26). Considering the proportion to gather with 80% power, 95% confidence interval,

and 1:1 of unexposed to exposed in the sample, the estimated sample size came out to be 367. By considering the design effect of 2 that occurs for multistage cluster sampling, the required sample size was 734.

The formula and calculation are as follow:

n = [Z2 a/2 (pq)] +B2 * Design effect

Where,

Z2 (a/2) = (1.96 at 95% CI)

p=Proportion of domestic violence 0.5

q= Proportion of no domestic violence 1-0.5= 0.5

B2= Bound on error (0.05)2

Design effect = 2

The final sample size adjusting to cluster effect came to be (367*2) = 734

With the inclusion of 5% non-response and missing data, the final sample size came to be 770 dyads.

In the qualitative part, two FGDs will be conducted, one with community leaders and the other with community health care workers. A maximum of 12 participants will be required for that process.

DATA COLLECTION PROCEDURE:

For the quantitative data, data collectors will be visiting the randomly selected houses. Data collectors will be female psychology students or nursing students, considering the sensitivity of

the topic. For security reasons, male field supervisors will be allotted with the data collectors' team to communicate with the community and lead the data collection process. Women will be screened for eligibility and enrolled after taking written informed consent. A study ID will is assigned to her. Data collectors will be collecting demographic data, and specific questions related to DV will be asked. During the data collection process, privacy and confidentiality will be maintained. The data will be collected using a standard questionnaire (PDHS-Domestic violence module). At the end of the interview, data collectors check the questionnaire for errors, inconsistencies, and missing values before leaving the house. If there is no woman of reproductive age living in the house or locked houses, the next house will be approached.

The FGDs will be conducted in the next process to understand the perspective of community leaders and HCWs regarding domestic violence and its prevention strategies. A semi-structured guide will be used for this purpose.

DATA MANAGEMENT

The quantitative data will be collected using Epidata software 3.1. A data entry operator will enter the data. Every form has a unique participant identification (ID) to avoid duplication. PI will check 10% of randomly selected questionnaires for errors, inconsistencies, and missing values. After data entry, the entered data will be password protected. Also, backup files for electronic data will be maintained to prevent loss of data. For qualitative data, All the interviews will be audio recorded with the permission of participants, which will be transcribed and translated for themes/sub-themes development.

DATA COLLECTION TOOL

For the quantitative data collection, Demographic Health Survey (DHS) Domestic violence tool will be used to collect the data from participants. For basic information about the participants, a questionnaire will be developed. The reliability of the tool was 0.9, calculated using Cronbach's alpha. The qualitative tool will be developed for FGD, which will have questions regarding the perception of community leaders and HCWs to address the issue and develop strategies to prevent DV. FGD will be led by the Principal Investigator with the team at community centers/ halls. The strong through every mile (STEM) theoretical framework will be used which focuses on tertiary prevention, coping, and recovery from domestic violence. STEM's expected outcomes are supported by four main theoretical frameworks: self-determination theory, self-efficacy theory, locus of control, and social capital theory. Additionally, the empowerment, happiness, and mindfulness literature provides support for STEM's anticipated outcomes (5).

STUDY VARIABLES

OUTCOME VARIABLE

Domestic violence, according to WHO violence is defined as the intentional use of physical force and power, threatened or actual, against oneself, another person, or against oneself, another person or against a group or community that either result in or has a high likelihood of resulting in injury, death, psychological harm, maldevelopment, and deprivation and the act of this violence in a domestic setting is called domestic violence) against women of reproductive age, both married & unmarried, resident of Quetta, Balochistan. This variable will be binary violence against women Yes/No.

MEASUREMENT OF VIOLENCE

PDHS 2017-18 domestic violence tool will be used, and information will be obtained from both married and unmarried women on their experience of violence committed by their current and former husbands and by others. More specifically, violence committed by the current husband (for currently married women) and by the most recent husband (for formerly married women). There will be three specific domains with operational definitions.

Physical spousal violence: push you, shake you, or throw something at you; slap you; twist your arm or pull your hair; punch you with his fist or with something that could hurt you; kick you, drag you, or beat you up; try to choke you or burn you on purpose; or threaten or attack you with a knife, gun, or any other weapon.

***Emotional spousal violence*:** say or do something to humiliate you in front of others, threaten to hurt or harm you or someone close to you, or insult you or make you feel bad about yourself.

COVARIATES

Different factors are associated with domestic violence against women. The individual factors that will be assessed are like women's age at the time of the survey, ethnicity, like Pashtun, Baloch, Hazara women's highest level of education, primary, secondary graduate, postgraduate women's occupation, housewife ,teacher, working in health sector Husband/Partner's age, Husband's highest level of education, types of occupation of the participant and partner, type of family nuclear , joint family total number of family members of the victim or participant , total number of children, of the participant, years of Marriage of the participant , monthly family income, of the participant in rupees geographic location of the participant and substance abuse. like drugs abuse, cocaine abuse, antidepressant, marijuana

A-PRIORI CONFOUNDERS

Age of the participant, level of education, occupation and geographical location are categorized as a-priori confounders in this research. Literature reports lower age groups have more chances of violence compared to senior, difference in education can be a confounder, as more educated women is a empowered woman. Moreover, a working woman faces less violence compared to a housewife. There is a significant difference in urban and rural areas population which affects the violence rates (20).

Qualitative covariates will be the perspective and opinion of community leaders and HCWs for developing potential strategies for preventing domestic violence against women.

PLAN OF STATISTICAL ANALYSIS

Mean ±SD will be calculated for all normally distributed continuous variables, for example age of subjects. Frequencies and percentages will be computed for all qualitative variables.

The outcome or dependent variable of the study is binary therefore binary logistic regression will be used. The univariate analysis will be done to know the individual effect of the independent variable when regressed against the domestic violence. P-value is less than or equal to 0.25 will be considered significant. Those variables that are not significant will be removed after this process.

A stepwise approach will be used for multivariable analysis. Multicollinearity will be checked between all the variables before multivariable analysis. Multicollinearity will be assessed through different tests. After exploring Multicollinearity, the multivariable analysis will be performed. Variables that will be significant at the univariate level will be added one after another in the model based on a P-value less than or equal to 0.05 is the cut-off for the significance of multivariable analysis. Biologically plausible interactions between variables will also be assessed in the main

modelf there is no interaction found between variables, then we will check for confounders. STATA version 17 will be used for the analysis.

Qualitative data will be transcribed i.e., the data collected from focus groups discussion, and two independent coders will review the transcript and develop a codebook from the responses. A qualitative content analysis using Atlas.it software (Berlin, Germany) will be performed to identify recurrent themes/sub-themes related to perspective and opinion regarding the prevention of DV.

LIMITATIONS AND VALIDITY

INTERNAL VALIDITY

The study has few biases which are addressed at both designs and will be addressed in the analysis phase.

RECALL BIAS

Some of the questions required the participant to recall especially related to domestic/intimate partner or gender-based violence that happened in the past, there will be possible to recall issues.

WISH BIAS

There are certain questions in the questionnaire which can produce wish bias if a participant tries to hide certain information related to personal information or violence. To address this bias questionnaire is designed in such a way that these questions will be asked less sensitively. However, the possibility of wish bias cannot be excluded.

EXTERNAL VALIDITY

The results will be generalized to women of reproductive age (15-49 years). The factors may be different in different settings like social, cultural and religion norms.

ETHICAL CONSIDERATIONS AND APPROVAL

The approval for the study was obtained from Aga Khan University's Ethical Review Committee (ERC Ref # 6114). The data collectors will be given proper training on ethical consideration and sensitivity of the topic before beginning with the interview process. A proper process for the data collection will be followed to comply with ethical considerations. The complete data collection process including consent will be taken in separate room or place. Data collection will be done in close doors at the participant home, if participant will not be comfortable, she will be called with her and house head permission at separate place like community hall, community head's house, lady health visitor (LHV) clinic or Basic Health Units (BHUs). There will be no force on data collection if she or her husband or house head refuse to give permission. Data collectors will be properly trained to handle any unwanted situations, they will be given a proper counseling training, especially during emotional breakdowns and situations, to empathize the participant. Data collectors will be females either Nurses, LHVs or Psychology students and should have the proper experience to provide emotional support and comfort. Furthermore, during the process of data collection, the participant's name will be kept anonymous to ensure anonymity and confidentiality. All participants will be given complete information about the study and only after that, they will provide their consent which shall be voluntary. Participants will also be informed that they can discontinue the interview process at any point during the interview without facing any consequences. Before going to ask sensitive question related to the study once again permission will be granted from the participant, the collected data will be protected, and access will be only given to primary investigators. Participants will also be referred to appropriate counseling and assistance as per need and requirement.

REFERRALS FOR DOMESTIC VIOLENCE VICTIMS

Participants who will need the medical attention or having any adverse health consequences due to violence will be referred to Non-governmental Organization (NGOs) or health facilities for the proper counselling and medical help. Prior to the study such organizations will be identified and listed for the referral in Quetta. This study will not bring any direct benefit to the participants, however those who would ask for help and who do not will be provided with NGOs, phone numbers and hospital contacts to seek help in case they need it.

PUBLIC HEALTH IMPLICATION

Violence against women is increasingly seen as a public health problem globally. This will help in the fulfilling research gaps for associated factors with domestic violence against women in Quetta. The findings from this research will help different sectors to develop the interventions and government to plan and strategize strict laws and policies to control or end the violence against women in Pakistan. Moreover, this will generate evidence through numbers for further understanding of cause and reasons of violence and will be pioneer for violence research in Quetta Balochistan.

PATIENT AND PUBLIC INVOLVEMENT

Study protocol- No patient involved

ABBREVIATIONS

DHS: Demographic Health Survey

DV: Domestic Violence

FGD: Focus Group Discussion

HCW: Health Care Worker

NGOs: Non-governmental Organizations

Declaration

Consent for publication

Not Applicable

Availability of data and materials

Data and materials are available to the corresponding author, which can be shared at a reasonable request.

Competing interests

The authors declare no competing interest.

Funding

Not Applicable

Authors' Contribution

SM- Conceptualization & Writing original draft

SS- writing, reviewing and editing

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14-Jul-2021

Mr. Salman Muhammad Soomar
Department of Community Health Sciences
Aga Khan University
Karachi

Dear Mr. Salman Muhammad Soomar,

2021-6114-18575. Factors associated with domestic violence among women of reproductive age (15-49 years) in Quetta, Balochistan- A mix method study

Thank you for submitting your application for ethical approval regarding the above-mentioned study.

Your study was reviewed and discussed in ERC meeting. There were no major ethical issues. The study was given an approval for a period of one year with effect from 14-Jul-2021. For further extension a request must be submitted along with the annual report.

List of document(s) approved with this submission.

Submission Document Name	Submission Document Date	Submission Document Version
English DHS domestic violence tool	29-Mar-2021	1.0
Scanned Documents NOC From DC Quetta	05-May-2021	1.0
Authorization Letter - HK	05-May-2021	1.0
Affidavit for Translation-converted	05-May-2021	1.0
Urdu-DHS-domestic-violence-tool	19-May-2021	1.1
Urdu-Screening-and-Baseline-Questionnaire (2)	19-May-2021	1.1
Balochi DHS domestic violence tool	19-May-2021	1.1
Balochi Screening and Baseline Questionnaire	19-May-2021	1.1
English Screening and Baseline Questionnaire	19-May-2021	1.0
Parental consent form in English-converted	12-Jun-2021	1.3
Pashto parental	12-Jun-2021	1.3
Pashto screening and baseline questionnaire	12-Jun-2021	1.3
Pashto DHS domestic violence tool new (1)	12-Jun-2021	1.3
Informed Consent in English-converted	12-Jun-2021	1.3

Assent form in English-converted	12-Jun-2021	1.3
Pashto informed	12-Jun-2021	1.3
Pashto assent	12-Jun-2021	1.3
Balochi assent edited	12-Jun-2021	1.3
Balochi informed	12-Jun-2021	1.3
Balochi parental	12-Jun-2021	1.3
Urdu informed (1)	12-Jun-2021	1.3
Urdu assent edited (1)	12-Jun-2021	1.3
Urdu parental (1)	12-Jun-2021	1.3
Protocol version 1.3 12072021	12-Jul-2021	1.3
Response to ERC comments	12-Jul-2021	1.0

Any changes in the protocol or extension in the period of study should be notified to the Committee for prior approval. All informed consents should be retained for future reference.

Please ensure that all the national and institutional requirements are met.

Thank you.

Sincerely,

Dr. Hammad Ather

Chairperson
Ethics Review Committee

BMJ Open

Factors associated with domestic violence among women of reproductive age (15-49 years) in Quetta, Balochistan- A mix-method protocol.

Journal:	*BMJ Open*
Manuscript ID	bmjopen-2021-057299.R2
Article Type:	Protocol
Date Submitted by the Author:	20-Apr-2022
Complete List of Authors:	Soomar, Salman; The Aga Khan University, Emergency services Soomar, Sarmad; The Aga Khan University, School of Nursing and Midwifery
Primary Subject Heading:	Public health
Secondary Subject Heading:	Qualitative research, Sexual health, Health services research, Epidemiology
Keywords:	PUBLIC HEALTH, QUALITATIVE RESEARCH, EPIDEMIOLOGY

RESEARCH PROTOCOL

Factors associated with domestic violence among women of reproductive age (15-49 years) in Quetta, Balochistan- A mix-method protocol.

Salman Muhammad Soomar[1], Sarmad Muhammad Soomar[1]

[1]Aga Khan University, Karachi Pakistan

Corresponding Author

Mr. Salman Muhammad Soomar, MSc, Research Fellow Department of Emergency Medicine, Aga Khan University, Karachi, Pakistan. salman.soomar@aku.edu

Co-Authors

Mr. Sarmad Muhammad Soomar, MSc, Clinical Preceptor (Community Health) School of Nursing and Midwifery, Aga Khan University, Karachi, Pakistan. sarmad.soomar@aku.edu

ABSTRACT

Background

Worldwide, domestic violence is a cause of death and disability among women aged 15–49 years. In Pakistan, domestic violence appears in different forms, and only 3.2% of women report any domestic violence. There are various factors associated with DV against Women. The data is sparse for the Balochistan province due to the under-reporting and scattered population. This research study aims to determine the factors associated with domestic violence and the types of violence among women of reproductive age. Also, to understand the perspective of community leaders and HCWs for developing interventions for domestic violence prevention against women of reproductive age in Quetta Balochistan.

Methods and analysis

A sequential explanatory mixed-method (quantitative study followed by qualitative) study design will be used to fulfill the study's objectives. Women of reproductive age 15 to 49 years, both married and unmarried, local residents, community leaders, and community health care workers of Quetta Balochistan, will be made part of the study. A structured questionnaire will be used as the quantitative tool. Focus group discussions will be conducted using a semi-structured guide for the qualitative data collection. The multivariable logistic regression analysis will be performed for the quantitative part. P-value ≤ 0.05 will be considered significant. In the qualitative part, data will be transcribed, and recurrent themes/sub-themes will be developed to understand the perspective and opinion regarding DV prevention.

Ethics and dissemination

Ethical Approval was taken from Aga Khan University, Karachi, Pakistan. Informed written consent will be obtained from all participants. The article will be published after data collection and analysis in the journal to disseminate the results.

Keywords: Domestic Violence, Women, Reproductive Age, Factors, Prevention

Strength and Limitations

- This is the first-ever community-based study in Balochistan, Pakistan, to understand both factors associated with domestic violence and the perspective to prevent it.
- This is also the first-ever study to include community leaders and health care workers because they have more ideas regarding the community problems.
- Large sample size with a multi-cluster sampling strategy is used to collect data from the women of reproductive age from the significant capital city of the Balochistan province.
- Certain biases associated with the study such as recall and wish bias and generalizability, will be limited to women of reproductive age.

INTRODUCTION

Domestic Violence (DV) is a worldwide epidemic. An estimated 30% of women experience physical and sexual violence globally (1). Domestic violence includes violence perpetrated by a family member or intimate partner towards another adult (2). Much of the current international evidence focuses on intimate partner violence (IPV), a subset of DV. It is a severe violation of human rights and significant public health issues. Worldwide, domestic violence is a cause of death and disability among women aged 15–49 years (3). In addition to causing injury, violence

increases women's long-term risks of several other health problems, including physical and mental health issues (2, 3). Abused women are two times more likely to have medical visits, 8-fold more like to seek mental healthcare, and have an increased rate of hospitalization than non-abused women (3)

The reported lifetime prevalence of physical or sexual violence, or both, varied from 15% to71% among different countries (4, 5). The prevalence was highest in the WHO African, Eastern Mediterranean, and South-East Asia Regions (6). Approximately 37% of ever-partnered women reported physical and sexual and IPV at some point in their lives (6-8). They reported the subsequent highest prevalence in the American area, with approximately 30% of women reporting lifetime exposure (9). Prevalence was lower in the high-income region, 23%, and in the European and the Western Pacific Regions, where 25% of ever-partnered women reported lifetime intimate partner violence experience (10). During the COVID-19 pandemic, a considerable increase was seen globally in the DV and IPV cases. According to the WHO, there was a rise of 50% to 60% of cases based on survivor calls for help to women organization hotlines (11)

Domestic violence appears in various forms in Pakistan, and only 3.2% of women report domestic violence (12). In rural areas of Pakistan, the prevalence of physical violence against women was 56% (13). In contrast, the lifetime prevalence in urban environments is 57.6% physical, 54.5% sexual, and 83.6% psychological abuse (14-16).

There are different factors associated with DV against Women. There is still gender discrimination in many cultures due to sociocultural influences, including unequal access of women to health services, the unequal status of gender relations, emphasis on women's primary reproduction

responsibilities, lower educational level, and unequal job opportunities (15). Other than these factors, women's power dynamics, patriarchy, low socio-economic status, and substance abuse by a partner or family male were essential factors associated with DV against women (12, 13, 17). Infertility in women is also a significant reason for violence against women in different parts of the World (18, 19). Moreover, research has indicated that there has been violence during pregnancy (20). The reasons for violence in pregnant women are a partner's alcohol misuse, jealousy, stress, and unemployment, which might be risk factors of DV during pregnancy (21, 22).

While confirming that physical and sexual partner violence against women is widespread, the variation in prevalence between different regions emphasizes that this violence is not unavoidable and needs to be addressed.

RATIONALE

There are two reasons for which this study is important. First the data regarding any type of violence against women of reproductive age is sparse for the Balochistan province due to the under-reporting and scattered population. Second there are some important factors which contribute to domestic violence against women in the province, the significant factor is education. Balochistan's literacy rate is below 50% compared to other regions of Pakistan (23). Moreover the people of Balochistan follow strict sociocultural norms like not allowing women to go outside the home for education and doing jobs, and there is gender discrimination and male dominance (24). Not much is documented about violence against women from this part of the country. This study aims to identify the DV's associated factors and determine the type of violence used, i.e., physical, verbal, emotional, and psychological violence against women of reproductive age in Quetta Balochistan, Pakistan. The study will document the factors and types of domestic violence in this conservative area which will pave the way for future studies and interventions in Pakistan.

OBJECTIVES

The study aims to determine the factors associated with domestic violence, types of violence among women of reproductive age and to understand the perspective of community leaders and HCWs for developing preventable strategies for domestic violence against women of reproductive age in Quetta Balochistan.

HYPOTHESIS

The odds of domestic violence among non-married women of reproductive age (both ever married and never married) will be two times higher than in married women of reproductive age groups.

OPERATIONAL DEFINITIONS

Physical spousal violence: push you, shake you, or throw something at you; slap you; twist your arm or pull your hair; punch you with his fist or with something that could hurt you; kick you, drag you, or beat you up; try to choke you or burn you on purpose; or threaten or attack you with a knife, gun, or any other weapon(25).

***Emotional spousal violence*:** say or do something to humiliate you in front of others, threaten to hurt or harm you or someone close to you, or insult you or make you feel bad about yourself.(26).

Verbal abuse/violence: Verbal abuse—a type of emotional abuse—is when someone uses their words to assault, dominate, ridicule, manipulate, and/or degrade another person and negatively impact this person's psychological health. Verbal abuse is a way for a person to control and maintain power over another person (26).

Psychological abuse/ violence: Psychological violence is intimately related to a person's inability to tolerate another when circumstances make communication difficult(27).

METHODS

STUDY DESIGN

A sequential explanatory mixed-method (quantitative study followed by qualitative) study design will be used. . A cross-sectional study design will be used for quantitative part followed by a phenomenological approach in the qualitative part.

STUDY SETTING AND STUDY SITE

It will be conducted in the district of Quetta, Baluchistan, the provincial capital of Balochistan. It has 2 Tehsils i.e., Chiltan and Zarghoon. These tehsils are further constituted of 50 Union councils. The district's total population is 2.5 million, and there are 263143 households in the district. Baloch and Pashtuns inhabit the community with segments of Hazara and Punjabis. (Pakistan Bureau of Statistics, Census 2017).

STUDY PARTICIPANTS

Study participants will be women of reproductive age 15 to 49 years for quantitative component. For qualitative component data will be collected from community leaders and community health care workers of Quetta Balochistan.

STUDY DURATION

This study is planned to start from December August 1, 2022 , and the expected end date will be March 31, 2022. The study duration will be eight months.

ELIGIBILITY CRITERIA

All women of reproductive age (15 to 49 years), both ever married and never married And resident of the Quetta for at least five years (will be confirmed through CNIC) will be included in quantitative component of the study.

Community leaders and community health care workers of Quetta Balochistan are willing to participate in the study and give informed written consent will be included in the qualitative part of study.

SAMPLING STRATEGY

We will use a two-stage sampling design; first will select households from the list taken from the health department of government of Balochistan. This selection of households in each UC will be manmade by a randomizer through the computer-generated list of all households in the UC. Once the households are selected, data collectors will visit the selected families for data collection. A single woman from each home will be selected randomly for data collection in each household if the randomized woman doesn't provide informed consent, the next woman in the same household will be approached, and if all the women of reproductive age in the randomly selected household refuse to provide data, the adjacent household will be selected for data collection. For the qualitative part, a non-probability purposive sampling strategy will be used.

SAMPLE SIZE

For the quantitative part, the sample size was calculated using the factors associated with domestic violence in women of reproductive age in Quetta, Pakistan in this regard, the different factors, i.e., number of reasons for which wife-beating is justified, women afraid of husband and spouse education were identified from the literature (14,23). The proportion of all these factors varied in the literature, level of spouse education with exposed 33.8% and Unexposed 26.2% to the number of reasons for which wife beating is justified with exposed 29.3% to unexposed 39.23% (13,14,23,25,26). Considering the proportion to gather with 80% power, 95% confidence interval, and 1:1 of unexposed to exposed in the sample, the estimated sample size was 367. Considering

the design effect of 2 that occurs for multistage cluster sampling, the required sample size was 734.

The formula and calculation are as follow:

n = [Z2 a/2 (pq)] +B2 * Design effect

Where,

Z2 (a/2) = (1.96 at 95% CI)

p=Proportion of domestic violence 0.5

q= Proportion of no domestic violence 1-0.5= 0.5

B2= Bound on error (0.05)2

Design effect = 2

The final sample size adjusting to the cluster effect came to be (367*2) = 734

With the inclusion of 5% non-response and missing data, the final sample size came to be 770 dyads.

In the qualitative part, two FGDs will be conducted, one with community leaders and community health care workers. A maximum of 12 participants will be required for that process.

DATA COLLECTION PROCEDURE:

Data collectors will visit the randomly selected houses for the quantitative data. Data collectors will be female psychology students or nursing students, considering the topic's sensitivity. For security reasons, male field supervisors will be allotted with the data collectors' team to communicate with the community and lead the data collection process. Women will be screened

for eligibility and enrolled after taking written informed consent. A study ID will is assigned to her. Data collectors will be collecting demographic data, and specific questions related to DV will be asked. During the data collection process, privacy and confidentiality will be maintained. The data will be collected using a standard questionnaire (PDHS-Domestic violence module). At the end of the interview, data collectors check the questionnaire for errors, inconsistencies, and missing values before leaving the house. If no woman of reproductive age lives in the house or locked houses, the next house will be approached.

The FGDs will be conducted in the next process to understand the perspective of community leaders and HCWs regarding domestic violence and its prevention strategies. A semi-structured guide will be used for this purpose. To mitigate risk and women reply without any fear it will be made sure that the participating women have no risk or harm of violence due to this study. The neighborhoods will be identified with the help of community leaders, and it will be made sure to collect data in the nearby basic health units, otherwise in the absence of a male or house head.

DATA MANAGEMENT

The quantitative data will be collected using Epidata software 3.1. A data entry operator will enter the data. Every form has a unique participant identification (ID) to avoid duplication. PI will check 10% of randomly selected questionnaires for errors, inconsistencies, and missing values. After data entry, the entered data will be password protected. Also, backup files for electronic data will be maintained to prevent data loss. For qualitative data, All the interviews will be audio recorded with participants' permission, which will be transcribed and translated for themes/sub-themes development.

DATA COLLECTION TOOL

For the quantitative data collection, Demographic Health Survey (DHS) Domestic violence tool will be used to collect the data from participants. For basic information about the participants, a questionnaire will be developed. The reliability of the tool was 0.9, calculated using Cronbach's alpha. The qualitative tool will be developed for FGD, which will have questions regarding the perception of community leaders and HCWs to address the issue and develop strategies to prevent DV. The Principal Investigator will lead FGD with the team at community centers/ halls. The strong through every mile (STEM) theoretical framework will focus on tertiary prevention, coping, and recovery from domestic violence. STEM's expected outcomes are supported by four main theoretical frameworks: self-determination theory, self-efficacy theory, locus of control, and social capital theory. Additionally, the empowerment, happiness, and mindfulness literature supports STEM's anticipated outcomes (5).

STUDY VARIABLES

OUTCOME VARIABLE

Domestic violence, according to WHO violence is defined as the intentional use of physical force and power, threatened or actual, against oneself, another person, or against oneself another person, or a group or community that either result in or has a high likelihood of resulting in injury, death, psychological harm, maldevelopment, and deprivation and the act of this violence in a domestic setting is called domestic violence) against women of reproductive age, both married & unmarried, residents of Quetta, Balochistan. This variable will be binary violence against women Yes/No.

MEASUREMENT OF VIOLENCE

PDHS 2017-18 domestic violence tool will be used. Information will be obtained from both married and unmarried women on their experience of violence committed by their current and former husbands and others. More specifically, violence committed by the current husband (for currently married women) and by the most recent husband (for formerly married women). There will be three specific domains with operational definitions.

COVARIATES

Different factors are associated with domestic violence against women. The individual factors that will be assessed are women's age at the time of the survey, ethnicity, Pashtun, Baloch, Hazara women's highest level of education, primary, secondary graduate, postgraduate women's occupation, housewife, teacher, working in health sector Husband/Partner's age, Husband's highest level of education, types of occupation of the participant and partner, type of family (nuclear , joint family) the total number of family members of the victim or participant, the total number of children, of the participant, years of Marriage of the participant, monthly family income, of the participant in rupees geographic location of the participant and substance abuse. like drugs abuse, cocaine abuse, antidepressant, marijuana

A-PRIORI CONFOUNDERS

Age of the participant, level of education, occupation, and geographical location are categorized as a-priori confounders in this research. Literature reports lower age groups have more chances of violence compared to senior, and differences in education can be a confounder, as more educated woman is an empowered woman. Moreover, a working woman faces less violence compared to a housewife. There is a significant difference in urban and rural areas populations which affects the violence rates (20, 24).

Qualitative covariates will be the perspective and opinion of community leaders and HCWs for developing potential strategies for preventing domestic violence against women.

PLAN OF STATISTICAL ANALYSIS

Mean ±SD will be calculated for all normally distributed continuous variables, for example, the age of subjects. Frequencies and percentages will be computed for all qualitative variables.

The outcome or dependent variable of the study is binary; therefore, binary logistic regression will be used. The univariate analysis will be done to know the individual effect of the independent variable when regressed against domestic violence. P-value less than or equal to 0.25 will be considered significant. Those variables that are not significant will be removed after this process.

A stepwise approach will be used for multivariable analysis. Multicollinearity will be checked between all the variables before multivariable analysis. Multicollinearity will be assessed through different tests. After exploring Multicollinearity, the multivariable analysis will be performed. Variables that will be significant at the univariate level will be added one after another in the model based on a P-value less than or equal to 0.05 is the cut-off for the significance of multivariable analysis. Biologically plausible interactions between variables will also be assessed in the main model there is no interaction found between variables, then we will check for confounders. STATA version 17 will be used for the analysis.

Qualitative data will be transcribed, i.e., the data collected from focus groups discussion, and two independent coders will review the transcript and develop a codebook from the responses. A qualitative content analysis using Atlas.it software (Berlin, Germany) will be performed to identify recurrent themes/sub-themes related to perspectives and opinions regarding DV prevention.

LIMITATIONS AND VALIDITY

INTERNAL VALIDITY

The study has a few biases addressedin both designs and will be addressed in the analysis phase.

RECALL BIAS

Some of the questions required the participant to recall, especially related to domestic/intimate partner or gender-based violence that happened in the past, and there will be possible to recall issues. Appropriate data collection measures will be taken to mitigate the risk of recall. Hospital records for violence can be checked if available to avoid recall bias.

WISH BIAS

Certain questions in the questionnaire can produce wish bias if a participant tries to hide certain information related to personal information or violence. To address this bias, the questionnaire is designed so that these questions will be asked less sensitively. However, the possibility of wish bias cannot be excluded.

EXTERNAL VALIDITY

The results will be generalized to all women of reproductive age (15-49 years). The factors may differ in different settings like social, cultural, and religious norms.

ETHICS AND DISSEMINATION

The approval for the study was obtained from Aga Khan University's Ethical Review Committee (ERC Ref # 6114). The data collectors will be given proper training on ethical consideration and sensitivity of the topic before beginning the interview process. A proper process for the data collection will be followed to comply with ethical considerations. The complete data collection process, including consent, will be taken in a separate room or place. Data collection will be done

behind closed doors at the participant's home. Suppose the participant will not beis not comfortable. In that casis note, she will be called with her house head permission at a separate place like the community hall, community head's house, lady health visitor (LHV) clinic or Basic Health Units (BHUs). There will be no force on data collection if her husband or house head refuses to give permission. Data collectors will be properly trained to handle any unwanted situations. They will be given proper counseling training, especially during emotional breakdowns and situations, to empathize with the participant. Data collectors will be females, either Nurse, LHVs, or Psychology students, and should have the proper experience to provide emotional support and comfort.

Furthermore, during data collection, the participant's name will be kept anonymous to ensure anonymity and confidentiality. All participants will be given complete information about the study, and only after that will they provide their consent which shall be voluntary. Participants will also be informed that they can discontinue the interview process during the interview without facing any consequences. Before going to ask a sensitive question related to the study, permission will be granted from the participant, the collected data will be protected, and access will be only given to primary investigators. Participants will also be referred to appropriate counseling and assistance as per need and requirement. The article will be published after data collection and analysis in the journal to disseminate the results.

REFERRALS FOR DOMESTIC VIOLENCE VICTIMS

Participants who will need medical attention or have any adverse health consequences due to violence will be referred to Non-governmental organizations (NGOs) or health facilities for proper counseling and medical help. Before the study, such organizations will be identified and listed for referral in Quetta. This study will not bring any direct benefit to the participants. However those

who would ask for help and who do not will be provided with NGOs, phone numbers, and hospital contacts to seek help if they need it.

PUBLIC HEALTH IMPLICATION

Violence against women is increasingly seen as a public health problem globally. This will help fill research gaps for associated factors with domestic violence against women in Quetta. The findings from this research will help different sectors to develop the interventions and the government to plan and strategize strict laws and policies to control or end the violence against women in Pakistan. Moreover, this will generate evidence through numbers for further understanding of the cause and reasons of violence and will be a pioneer for violence research in Quetta Balochistan.

PATIENT AND PUBLIC INVOLVEMENT

Study protocol- No patient involved

ABBREVIATIONS

DHS: Demographic Health Survey

DV: Domestic Violence

FGD: Focus Group Discussion

HCW: Health Care Worker

NGOs: Non-governmental Organizations

Declaration

Consent for publication

Not Applicable

Availability of data and materials

Data and materials are available to the corresponding author, which can be shared at a reasonable request.

Competing interests

The authors declare no competing interest.

Funding

Not Applicable

Authors' Contribution

SM- Conceptualization & Writing original draft

SS- writing, reviewing and editing

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