# Muntazar

# KASHMIR MENTAL HEALTH SURVEY

## REPORT 2015

MEDECINS SANS FRONTIERES
DOCTORS WITHOUT BORDERS

## ABOUT THE COVER

Cover image
Survey enumerators, village in Pulwama
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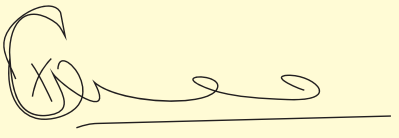
## PREFACE

The universal objective of research has to be the well-being of humanity and to gain new knowledge. To assess the need and plan any intervention including the development of services, policy makers, administrators, researchers and clinicians all have to have relevant, reliable scientific data as otherwise they will have to depend on wild guesses and that is always fraught with failures and erroneous results. The results of systematic surveys or studies can therefore not only have important theoretical implications of the cause and cross-cultural nature, but can be of immense help to construct a client profile so as to tailor and develop the services both by the Government as well as by N.G.Os in an optimal way such that the services and facilities remain strictly relevant to the needs of population.

Kashmir Mental Health Survey 2015 conducted by Médecins Sans Frontières in collaboration with Institute of Mental Health and Neurosciences, Kashmir and Kashmir University is a commendable attempt in this direction, in the State of Jammu and Kashmir. This survey, as is clearly reflected in this final report, has been conducted in all the districts of Kashmir Valley, focusing mainly on most prevalent disorders like depression, anxiety disorders, and posttraumatic stress disorder. Despite a limitation of use of only screening tools in the estimation of the prevalence of these disorders, the findings confirm a serious mental health situation, with highly prevalent common mental disorders and distress having continued to increase to reach epidemic levels among the traumatised population of Kashmir, with 37% of adult males and 50% of females suffering from probable depression; 21% of males and 36% of females from a probable anxiety related disorder and 18% men and 22% women suffering from probable PTSD.

One hopes and expects that these disturbing survey findings are sufficient enough to jolt all the stakeholders from complacency and make them join hands to mobilise all possible government as well as community resources to handle the emergency situation and try to develop and strengthen comprehensive policies for promotion of mental health as well as evidence based efficient innovative programs for prevention, early identification, care and support to the people with mental disorders and their families in Kashmir.



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## ACKNOWLEDGEMENTS

We would like to acknowledge the contribution of Akke Boere, who initially proposed the idea of conducting a mental health survey in the Kashmir Valley in order to obtain updated figures on the prevalence of mental distress.

We would also like to acknowledge and thank the Directorate of Health Services, Jammu and Kashmir for facilitating and granting us access to all ten districts of the valley for conduction of the survey and validation of the mental health screening tools.

### *Funding*

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### *Technical support*

We would like to express our gratitude to Nontas Papadimitriou, who transformed the paper questionnaire into an electronic version using Open Source Datakit (ODK), set up the secure server and was always available for problem solving; also to Amrendra Kumar for his support during the training of enumerators on the use of ODK and Maverick, the global positioning system for identifying randomly selected households in urban areas. In addition, we are very grateful to Idriss Ait-Bouziad for developing the survey navigation maps of the 400 selected villages and the maps in this report.

### *Validation of screening tools*

We would like to thank the validation team who participated in a preliminary research project in which the Hopkins Symptoms Checklist (HSCL-25) and Harvard Trauma Questionnaire (HTQ-16) were culturally adapted, translated and validated for the Kashmiri context. In addition to the authors of this report, the validation team also included Dr Majid Safi, Dr Altaf Ahmad, Dr Rayees Ahmad and Dr Mansoor Ahmad from IMHANS, Shabnum Ara, Altaf Paul, Zahur Wagay and Mohammad Akmal Shah from MSF, Kashmir.

### *Fieldwork*

We would like to express our gratitude to the following people, without whose dedication the survey could not have taken place.

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**Focus group discussions**

Shabnum Ara, Mohammad Akmal Shah, Rafia Rashid, Saika Farid and Showkat Ahmed Lone.

We would also like to thank the leaders of the 399 villages that our teams visited for granting us permission to conduct the survey and providing hospitality and assistance.

Most of all we would like to express our gratitude to the individuals who consented to be interviewed and who answered personal and sometimes distressing questions to help us gain an insight into the status of mental health in the Kashmir Valley. We appreciate your openness and willingness to participate.

## ABBREVIATIONS

| | |
|---|---|
| **ASHA** | Accredited Social Health Activists |
| **CHW** | Community Health Care Workers |
| **CI** | Confidence Interval |
| **DMHP** | District Mental Health Plan |
| **DSM-IV** | Diagnostic and Statistical Manual of Mental Disorders, fourth edition |
| **EA** | Enumeration Area |
| **FGD** | Focus Group Discussions |
| **HSCL-25** | Hopkins Symptoms Checklist – 25 items |
| **HTQ-16** | Harvard Trauma Questionnaire: posttraumatic stress disorder – 16 item checklist |
| **IMHANS** | Institute of Mental Health and Neurosciences |
| **IPD** | In-patient department |
| **KMHS** | Kashmir Mental Health Survey |
| **MINI** | Mini-international Neuropsychiatric Interview |
| **MSF** | Médecins Sans Frontières |
| **NGO** | Non-Governemental Organisation |
| **NMHP** | National Mental Health Plan |
| **OPD** | Out-patient Department |
| **PIP** | Program Implementation Plan |
| **PSU** | Primary Sampling Unit |
| **PTSD** | Posttraumatic Stress Disorder |
| **SD** | Standard Deviation |
| **SE** | Standard Error |
| **WHO** | World Health Organization |

## EXECUTIVE SUMMARY

The Kashmir Mental Health Survey (KMHS) report provides a summary of the results of the first mental health survey conducted in all 10 districts of the Kashmir Valley.

The main objective of the KMHS 2015 was to estimate prevalence of mental health-related conditions, specifically depression, anxiety and posttraumatic stress disorder (PTSD) symptoms in Kashmir and to determine the accessibility to mental health services.

Probability sampling was used to randomly select 5600 households from 400 villages across the 10 districts of the Kashmir Valley. One individual 18 years or older was randomly selected from each household.

Individuals were interviewed about daily functionality, problems of daily life, coping mechanisms, substance use and exposure to traumatic events. Two screening tools – the Hopkins Symptoms Checklist (HSCL-25) and the Harvard Trauma Questionnaire (HTQ-16) – were embedded in the questionnaire in order to measure prevalence of depression, anxiety and posttraumatic stress symptoms in the population. Both tools had been culturally adapted and translated for use in Kashmir. The HSCL-25 had also undergone validation providing Kashmiri specific cut-off scores for anxiety and depression. The HTQ-16 was not validated so the internationally accepted cut-off was used.

The survey showed that nearly 1.8 million adults (45% of the adult population) in the Kashmir Valley are experiencing symptoms of mental distress, with 41% exhibiting signs of probable depression, 26% probable anxiety and 19% probable PTSD.

Multivariate logistic regression analysis identified the following characteristics as being significant predictive factors for developing symptoms of depression, anxiety and/or PTSD: sex (female), age (over 55 years), marital status (widow, separated or divorced), area of residence (rural) and exposure to multiple traumatic events. Education was shown to have a protective effect with individuals reporting lower education outcomes more likely to have mental distress and individuals with secondary or tertiary education shown to have a significant decreased risk of showing signs of mental distress.

The results indicate that, on average, an adult living in the Kashmir Valley has witnessed or experienced 7.7 traumatic events during his/her lifetime. Exposure to multiple traumatic events was positively associated with all three mental disorders. We found a dose-response relationship between traumatic events experienced or witnessed and the development of symptoms of depression, anxiety and PTSD. There was an upward trend in the proportion of all three disorders in districts reporting greater numbers of traumatic events in the population.

The most-reported problems of daily life faced by adults living in the valley are financial issues, poor health and unemployment. The main coping strategies adopted by Kashmiri adults are prayer, talking to a family member or friend and keeping busy.

Limitations of this study include the over-representation of female respondents (67%), which was corrected by post-stratification weighting. The survey was restricted to adults; children and adolescents were not included.

In addition, focus group discussions (FGDs) were held with men and women in each district to gain an understanding of treatment-seeking behaviours, access to services and perceived service needs.

Results from preliminary analysis of FGDs showed that health seeking behavior followed both socio-cultural and biomedical pathways; while many participants were aware of the psychiatric hospital in Srinagar, most were unaware of other mental health services. 'Peer' and 'doctor' were the providers most commonly mentioned. Respondents reported seeking care from both doctor and peer concurrently following the treatment of both service providers. The gap between treatment need and provision in Kashmir is multifaceted and complex. Identified barriers to seeking treatment included; lack of awareness of psychiatric services, travel time, cost and distance to services and poor physical infrastructure. Focus groups highlighted that the treatment gap in Kashmir is further complicated by the lack of understanding around the western 'counselling' or 'talk therapy' model of care to the majority of the Kashmiri population; their perceptions of the treatment and management of mental illness are essentially through the lens of biomedicine with an expectation of receiving medication. Bio-medicalisation of mental health care and treatment is supported by findings from the survey which showed that 11% of Kashmiri adults were taking benzodiazepines.

FGDs highlighted people's desire for decentralised mental health services, and also identified employment and business and skill development as necessary for improved mental health.

In summary, the burden of mental distress and evident gap in service delivery found in the KMHS 2015 highlights the need to develop a comprehensive and integrated decentralized prevention, care and treatment program in the Kashmir Valley, tailoring services to address the specific socio-cultural understanding of mental illness. The recommendations of this report are the result of contributions from various stakeholders working on mental health in the Kashmir Valley. There is unanimous agreement that mental health services across the valley should be decentralised.

Box 1.0 key recommendations from the KMHS 2015

**There is a requirement for:**

- Decentralisation and strengthening of mental health care services to address the gaps in availability and access to care at community level.
- Promotion of inter-sectoral and inter-departmental collaboration to create a holistic response for the prevention and care of mental distress.
- Investment in human resource development through robust processes of recruitment and training to expand the mental health expertise, throughout all levels and functions of the existing health structure.
- Increased awareness and sensitisation with community involvement in innovative IEC activities to address knowledge gaps, perception issues and treatment seeking behavior for mental health.
- Further research in the areas of suicide and substance use, in addition to child and adolescent mental health.

*On 11 May 2016, an expert group of key Kashmiri stakeholders took part in a round-table conference to formulate recommendations deemed necessary to effectively respond to the mental health situation as outlined in the KMHS 2015. The group consisted of:*

1. Dr Kaisar Ahmed, Principal, Government Medical College, Srinagar
2. Dr Maqbool Dar, Head of Department, IMHANS, Srinagar
3. Dr G.A. Wani, State Nodal Officer, National Mental Health Programme (NMHP), Srinagar
4. Dr Mushtaq Margoob, Senior Psychiatrist, Srinagar
5. Dr Arshad Hussain, Associate Professor, IMHANS, Srinagar
6. Dr Muzaffar Khan, Director of the Police De-addiction Service, Srinagar
7. Dr Showkat Shah, Head of Department, Department of Psychology, University of Kashmir
8. Ms Saima Farab, Assistant Professor, Department of Social Work, University of Kashmir

The following are the outcomes of this consultative process which were agreed upon by all members of the expert group:

## (I) RECOMMENDATIONS FOR STATE POLICY MAKERS

1. HUMAN RESOURCES FOR MENTAL HEALTHCARE:

Within the State Program Implementation Plan (PIP), the State should:

(a) Create more posts at IMHANS, to cater for the increased requirement for specialists in health facilities at all levels of healthcare (e.g. in the areas of de-addiction, child psychiatry, geriatric mental health, disabilities and overall training of personnel).

(b) Create more teaching posts at IMHANS to address this increased requirement for education and training of personnel.

(c) Create posts for consultant psychiatrists and other mental health professionals such as clinical psychologists, psychiatric social workers, psychiatric nurses, counsellors etc. at subdistrict hospitals.

(d) At policy level, sensitise policy makers and advocate the formulation of appropriate criteria for job selection and the creation of appropriate posts according to the specialisation required. In addition, there should be a review of the existing job selection criteria for mental healthcare recruitment and other disability-related activities.
(e) Designate medical officers for specific posting to the 10-bedded units within the District Mental Health Programme (DMHP).

(f) Establish incentives for personnel working in mental healthcare, especially in rural areas.

2. TRAINING:

The State should:

(a) Create a policy on the training for existing healthcare personnel within the health field (e.g. DMHP psychologists, National Rural Health Mission-based counsellors, medical officers, in various programmes) with short-term courses in Mental Health to strengthen competencies relevant to their posts. within the system

(b) Create a highly motivated workforce and sensitise community personnel (e.g. community health workers (CHWs), accredited social health activists (ASHAs), Anganwadi workers, imams, preachers and faith healers, teachers, etc.), through training and empowerment, to increase awareness of mental health issues, including preventive measures to address substance use.

3. EDUCATION:

The State should:

Integrate mental health into the undergraduate medical education curriculum (MBBS), with a mandatory examination to reinforce its importance in general health.

4. THE MANAGEMENT OF MENTALLY ILL PATIENTS, INCLUDING THOSE WHO ARE HOMELESS:

The State should:

(a) Ensure that mentally ill patients are treated with dignity and not exploited.

(b) Develop a CRISIS team and a dedicated HELPLINE for Rescue and Rehabilitation, providing services such as transport, shelter etc. for all mentally ill patients, including those who are homeless.

(c) Create innovative models, within a legal approach, to cater for people without caretakers.

5. THE MANAGEMENT OF MENTALLY ILL PATIENTS IN INACCESSIBLE AREAS:

The State should:

(a) Ensure access to mental healthcare in inaccessible rural areas (especially those cut off for more than six months during the winter) through audiovisual technology, e.g. tele-psychiatry.

(b) Provide additional training for existing personnel in rural areas, to enable them to identify and manage all mental health issues during periods of inaccessibility (especially during the winter).

6. SUBSTANCE USE AND DE-ADDICTION:

The State should:

(a) Instruct the registration authority to formulate guidelines, in consultation with IMHANS, for the setting-up of de-addiction centres.

(b) Devise rehabilitative measures, including vocational skill training, for people recovering from drug addiction.

(c) In addition to providing detoxification at de-addiction centres, create a primordial preventive model, to address substance use (excessive use of tobacco, alcohol, drugs such as cannabis etc.), including the involvement of community personnel.

(d) Make efforts to control substance use by ensuring implementation of legal measures to restrict the availability of such substances.

(e) Encourage the Education System (schools, universities etc.) to incorporate information regarding substance use into the school curriculum and to educate children, especially adolescents, on the disadvantages of using such substances through popular media such as films showing their ill effects, and promote alternative activities such as sports.

(f) Limit the availability and use of organophosphate chemicals, to prevent their use in suicide.

7. INTERSECTORAL COLLABORATION:

The State should:

(a) Increase mental healthcare activities within existing systems of intersectoral collaboration (e.g. training of physical education teachers in creating awareness regarding de-addiction, child abuse, domestic violence etc.).

(b) Make it mandatory for all schools to have a counsellor and a special needs teacher as part of the School Mental Health Programme.

(c) Under the mandate of the Department of School Education, ensure existing teachers of children with special needs in the Sarva Shiksha Abhiyan work according to their set guidelines and job profile, with an appropriate monitoring and accountability mechanism; and increase liaison with the DMHP to sensitise teachers so that they are aware of mental health needs, just as they are alert to issues such as personal hygiene.

8. COMMUNICATION:

The State should:

(a) Ensure that programme and policy implementation is a community-driven process with a bottom-up approach, with the involvement of mental health professionals and other stakeholders at community level.

(b) Sensitise the authorities and the political system regarding mental health issues.

9. THE FUTURE OF THE NMHP:

The State should:

Ensure that only a psychiatrist holds the position of State Nodal Officer NMHP, and works with complete independence and autonomy in the supervision of the DMHP.

## (II) RECOMMENDATIONS FOR COLLABORATIVE DEPARTMENTS/IMPLEMENTERS

1. THE DELIVERY OF MENTAL HEALTHCARE IN THE FIELD:

The relevant actors should:

(a) Create links at community level with ASHAs for screening of mental health disorders including the provision of training and incentives.

(b) Reorient department personnel towards the field of mental health with the involvement of Anganwadi workers to identify and address mental health issues in the community, and implement a system for referral to mental health professionals.

(c) Ensure that people with appropriate academic qualifications – psychiatrists, clinical psychologists, psychiatric social workers, counsellors, CHWs etc. – occupy relevant posts/positions within the mental healthcare system.

(d) Ensure that all counsellors engaged in other programmes undergo basic mental health training to improve performance in the delivery of their primary role and facilitate early identification and referral of patients needing mental healthcare.

(e) Ensure proactive and continuous specialised patient-focused training and support for personnel recruited within the DMHP, with a continuous link to multiple supervision and performance-based evaluation programmes and appropriate action for underperformance.

(f) Establish gender specific community clinics for women at tertiary level, with increased sensitivity towards females

(g) Establish mobile mental health teams for acute mental health crisis management.

2. AWARENESS OF THE ILL EFFECTS OF SUBSTANCE USE

Educational institutions should:

(a) Be proactive and innovative in the implementation of the School Mental Health Programme, with the help of mental health professionals, and engage in screening films and documentaries dealing with social issues, including substance use.

(b) Ensure the non-availability of such substances within education settings.

3. COLLABORATION WITH CIVIL SOCIETY:

A formal link should be established between all allied institutions, the DMHP and NGOs working in the field of community mental health in Kashmir.

4. ESTABLISHMENT OF A WORKING GROUP:

An inclusive working group should be set up, consisting initially of all those present during the conference, and it should meet regularly to follow up the recommendations proposed.

## (III) RECOMMENDATIONS FOR FUTURE RESEARCH IN THE FIELD OF MENTAL HEALTH

Future research on mental health should focus on:

(a) A more detailed analysis of substance use.

(b) An epidemiological study of vulnerable populations such as children and the geriatric age group.

(c) A study on suicide, using available data on suicide attempts.

(d) An evaluation and review exploring whether gaps in care have been filled by the measures taken at community level (a year after their implementation).

## CHAPTER 1: INTRODUCTION

This chapter provides a contextual overview of KMHS 2015, with a brief summary of:

- Kashmir Valley demographics
- Political context
- Economic context
- Prior research on mental health in the valley
- Overview of the National Mental Health Plan
- Impetus for the survey
- Structure of the KMHS 2015 report

## GLOBAL BURDEN OF MENTAL ILLNESS

Globally, mental health disorders are among the leading causes of illness and disability. Mental illness leads to decreased productivity and has a negative impact on the quality of life of affected individuals and their families. Annually, over 450 million people worldwide experience mental health disorders, but few seek access to services. Barriers to seeking care and treatment are accentuated by social stigma, discrimination, lack of understanding and neglect. (1)

In populations affected by conflict, mental health is further undermined by the psychological and social impact of political instability and exposure to traumatic events. (2-5) Although challenging, conducting research in conflict-affected populations is of paramount importance as it has the potential to inform and strengthen policy and programming, and thus improve service delivery and assist in the process of rebuilding lives and society.

## THE KASHMIR VALLEY IN CONTEXT

*DEMOGRAPHICS*

The Kashmir Valley lies within the Indian state of Jammu and Kashmir between Jammu (to the south) and Ladakh (to the east) with the line of control (border with Pakistan) along its northern and western borders. It covers a geographical area of 15,948 $km^2$, with a population density of 430/$km^2$. The total population is 6.9 million, with 73% living in rural areas and 27% living in urban centres (2011 census). (6) The adult population is approximately 4 million with the district break down provided in Figure 1.0.

The main languages spoken in the valley are Urdu and Kashmiri. Kashmiris are the predominant ethnic group; other groups include the Gujjars and the Bakarwals, who live in the remote mountainous regions of the valley. The majority (97%) of the population is Muslim, with Hindus, Sikhs, Buddhists and Christians making up the other 3%. (6)

Figure 1.0: Adult population in the Kashmir Valley, by district. Indian Census 2011

## *POLITICAL CONTEXT IN KASHMIR*

Since the partition of India in 1947, the Kashmir Valley has been subject to continual political insecurity. Following three Indo-Pakistani wars (1947, 1965 and 1971) and one Indo-Chinese war (1962), an internal resistance movement for self-determination developed. In 1989, an insurgency began, resulting in 27 years of militant and military activity. (7) By 2012, approximately 70,000 Kashmiris had lost their lives in the conflict and 10,000 people had been reported missing. (8)

**Box 2.0 Legacy of political insecurity in Kashmir**

- 70,000 lives lost
- 10,000 missing persons
- Highest youth unemployment rate across India
- Lack of private investment in industry, resulting in an under-developed employment market
- Fractured and undependable tourist industry
- Uncertainty about future
- Traumatised population
- Breakdown of socio-cultural support systems

## *ECONOMIC CONTEXT*

Political instability has a negative impact on the social, economic and material fabric of society and gives rise to stressors affecting the everyday life and livelihood of the population. (3, 13) A nationwide survey conducted by the Ministry of Labour and Employment in 2012-2013 found that Kashmir had the highest youth unemployment rate across India, (4) with a high percentage of university graduates unemployed. The uncertain atmosphere in Kashmir over the past 27 years has prevented outside investment. At state level, the number of registered job seekers increased by 190% between 2008 and 2013. Employment-generating sectors such as commercial agriculture, forestry, fisheries and floriculture have been curtailed due to the prevailing political circumstances in the region. Where tourism was once the source of employment and economic growth, in the past 27 years it has become fractured and unreliable.

*Political instability not only exposes a population to traumatic events but also has a negative impact on the social, economic and material fabric of society.*

## *MENTAL HEALTH IN KASHMIR*

For the past decade, the high burden of mental illness in the Kashmir Valley has been reported by mental health practitioners and in empirical literature. IMHANS, in the valley's capital, Srinagar, has experienced an increase in outpatient presentations, from an average of 100 per week in 1980 (10) to 850 per week in 2016. (11)
In 2005, in a cross-sectional survey of 548 individuals in the districts of Kupwara and Badgam, De Jong et al. reported a prevalence rate of 33% for psychological distress.[1] (12) In a study involving 3000 individuals from all districts in 2006, Margoob and Ahmad estimated a point prevalence of 7.3% for PTSD[2] and a lifetime prevalence of 15.2%. (13) In 2009, Amin and Khan reported an estimated prevalence rate of 55.7% for depression in a study of 2728 individuals across all districts of the valley.[3] (14) Consistent with reported high prevalence rates of mental distress in the population, a retrospective study on suicide conducted by Shoib et al. recorded an increase of over 250% in the number of suicide attempts between 1994 and 2012. (15) Another study conducted by Margoob et al. (2006) on treatment-seeking behaviour of PTSD patients presenting to the Government Psychiatric Diseases Hospital in Srinagar reported a lag time between presentation of symptoms and seeking psychiatric treatment of 32 months in women and 48 months in men. The authors also stated that the percentage of patients seeking care was highly incongruent with the prevalence of PTSD in the community. (16)

*The 2012 NMHP suggested a renewed commitment by the Government of India to address the mental health needs of its population and called for research which could 'offer insights as well as pathways for change'.*

In 2011, a Kashmir-based report by Mercy Corps reported risks associated with high youth unemployment, which included feelings of failure, isolation, lack of social status, delayed marriages and an increase in tensions among disenfranchised young people, all of which have been compounded by the impact of future uncertainty related to ongoing political conflict. Expressions of disappointment, anger and hopelessness in addition to conflict-related stress, mental illness, suicide and drug addiction have been reported as prevalent in Kashmir's youth. (9)

These studies conducted 7-10 years prior to the KMHS 2015 called for community-based service delivery and community awareness programmes. Recommendations from these studies also included the need for training of healthcare providers in symptoms of mental distress to facilitate the early detection and management of mental disorders and the implementation of effective psychiatric referral systems.

In 1999, the National Mental Health Plan (NMHP) was initiated by the Indian Government with the intention of rolling out community-based mental health services in all Indian states. The programme

1. Estimates based on the Indian validated SRQ-20.
2. Estimates based on psychiatrist-administered Mini International Neuropsychiatric Interview (MINI).
3. Estimates based on the Centre for Epidemiological Studies Scale to measure symptoms of depression.

commenced in Jammu and Kashmir in 2004-2005. Alongside the NMHP, each district developed its own mental health plans – District Mental Health Plan (DMHP) – that reflects the national goals and principles but is tailored to the local context. In 2012, a nationwide review reported that the DMHP was barely functional in most districts of Jammu and Kashmir. This report suggested a renewed commitment by the Government of India to address the mental health needs of its population and called for research which could 'offer insights as well as pathways for change'. (17)

**Box 3.0: District Mental Health Plan aims**

- To offer a decentralised community-based approach to mental health
- To train mental health teams at nodal institutes
- To increase awareness about mental health problems and effective health-seeking patterns
- To provide adequate services to promote early detection and treatment of mental illness in the community and in both outpatient and inpatient department facilities with appropriate follow-up
- To collect data for planning, research and improvement of service provision

## ABOUT THE KMHS 2015

Anecdotal reports by mental health practitioners on the burden of mental disorders among the Kashmiri population were the impetus for this survey.

There was a recognised need for updated statistics and baseline data on the prevalence of mental distress in all 10 districts of the Kashmir Valley to support the development of mental health policies, review programmatic activities and improve services.

MSF partnered with the Department of Psychology of the University of Kashmir and IMHANS in the development and execution of the survey.

### *REPORT STRUCTURE*

This report outlines the results of the KMHS 2015 and is presented in four parts, followed by a set of appendices:

- Chapter 1, this introductory chapter, outlines the context in which the study took place.
- Chapter 2 provides a brief overview of the study methodology and a description of the characteristics of the survey respondents.
- Chapter 3 presents the results of our findings and is separated into four distinct parts (prevalence estimates, item analysis of the screening tools, problems of daily life and coping strategies, and risk factors).
- Chapter 4 reports preliminary findings from FGDs related to mental illness treatment-seeking behaviours, access to care and perceived service needs.
- Chapter 5 discusses the results of the study, linking findings to empirical literature.
- The appendices provide explanatory notes on the study methodology, supplementary statistical analysis tables and a breakdown of key findings by district.

### *CONVENTIONS USED IN THIS REPORT*

Several conventions are used to improve the readability of this report

- In the description of sample characteristics, data on the demographics of the sample has not been weighted.
- In all inferences about the adult population in Kashmir, data was weighted for the complex sampling design, using population estimates in the 2011 census
- In figures, proportions are shown as percentages rounded to the nearest whole number unless they are below 1%, in which case they are rounded to 1 decimal place.
- Rounding may result in totals not equalling 100%.
- Names of organisations, reports and initiatives are referred to by their full name, followed by the abbreviation in brackets, the first time they are mentioned, and by the abbreviation only thereafter.
- Where relevant, standard deviations (SDs), confidence intervals (CIs) and standard errors (SEs) are presented.
- 'N' is used to refer to the total sample size and 'n' to a subsample of the survey respondents.

## CHAPTER 2: OVERVIEW

This chapter provides a brief overview of the study methodology with a description of the characteristics of the survey respondents. It covers:

- The main objective of the KMHS 2015
- The organisation of the survey
- Ethics
- Sampling
- Response rates
- Household and individual sample characteristics

There is a more detailed description of the methodology in Appendix 1 and additional data tables can be found in Appendix 2.

## SUMMARY OF THE METHODOLOGY AND A DESCRIPTION OF THE SAMPLE CHARACTERISTICS

### Key findings

- The response rate was high, with 97.7% of households and individuals consenting for interview.
- 5428 interviews were analysed.
- The average age of respondents was 39 years, with nearly half (45%, n=2449) aged between 18 and 34 years.
- Women represented a high proportion of our sample (65%, n=3509).
- In total, 1899 (35%) respondents reported a history of no education.
- A high proportion of households in the Kashmir Valley reported a known family history of mental illness (27%, n=1466).

## OBJECTIVE OF THE KMHS 2015

The principal objective of the KMHS 2015 was to estimate prevalence of mental health-related problems, specifically depression, anxiety and posttraumatic stress symptoms in the Kashmir Valley and to determine the accessibility to mental health services.

Data from the KMHS 2015 provides not only an insight into the mental health needs in the Kashmir Valley but also important valley-wide baseline data. This data can inform mental health policy decisions and aid in the planning, monitoring and evaluation of mental health programmes, at both valley and district levels.

## ORGANIZATION OF THE SURVEY

The KMHS 2015 was the first comprehensive mental health survey conducted in all 10 districts of the Kashmir Valley. It was carried out by MSF and the Department of Psychology of the University of Kashmir. The survey was funded by MSF/Doctors Without Borders in India.

A technical advisory group including mental health experts, epidemiologists and a statistician was consulted throughout the planning and implementation phase of the survey. Key stakeholders were consulted during the drafting and compiling of the questionnaire. In planning for the survey, a separate research study was conducted in partnership with IMHANS and the Department of Psychology of the University of Kashmir, during which the screening tools for depression, anxiety and PTSD were decided on, culturally adapted, translated and validated for the Kashmiri population.

## ETHICS

The survey was approved by the MSF ethics review board (ERB), the Government Medical College, Srinagar ERB and the Australian National University ERB.

## A MIXED METHODS APPROACH

A mixed-methods design, which included a household survey and FGDs, was adopted to meet the objectives of the study.

We used a structured questionnaire to interview randomly selected 5428 adults from 399 villages across all ten districts of the Kashmir Valley. Individuals were interviewed about daily functionality, problems of daily life, coping mechanisms, substance use and exposure to traumatic events. Two screening tools: the Hopkins Symptoms Checklist (HSCL-25) and the Harvard Trauma Questionnaire (HTQ-16) were imbedded in the questionnaire in order to measure prevalence of depression, anxiety and posttraumatic stress disorder symptoms in the population. Both tools had been culturally adapted and translated for use in Kashmir.

The HSCL-25 had also undergone validation providing cut-off scores (specific for the Kashmir population) for anxiety and depression. The HTQ-16 was not validated so the internationally accepted cut-off was used. In addition to using cut-off scores for classifying probable disorders, diagnostic algorithms based on DSM-IV criteria and item responses for the HTQ-16 and HSCL-25 were used to estimate the prevalence of diagnosed severe depression and PTSD.

Convenience sampling was used to recruit participants for focus group discussions in each district to gain an understanding of treatment seeking behaviors, access to services and perceived service needs. The FGDs, involving 10 groups each of men and females, were set up to provide an insight into access to mental health services and the perceived service needs of the Kashmiri population. This element of the survey was not intended as a separate in-depth qualitative study on mental health in Kashmir but rather as a complementary research method to investigate the study questions more broadly.

## SAMPLING FRAME

The Kashmir Valley comprises 10 districts; each district is further divided into blocks and villages in rural areas, and wards in urban centres. Survey enumeration areas (EAs) were based on the 2011 census estimates and were defined as a village in rural areas and a ward in urban centres.

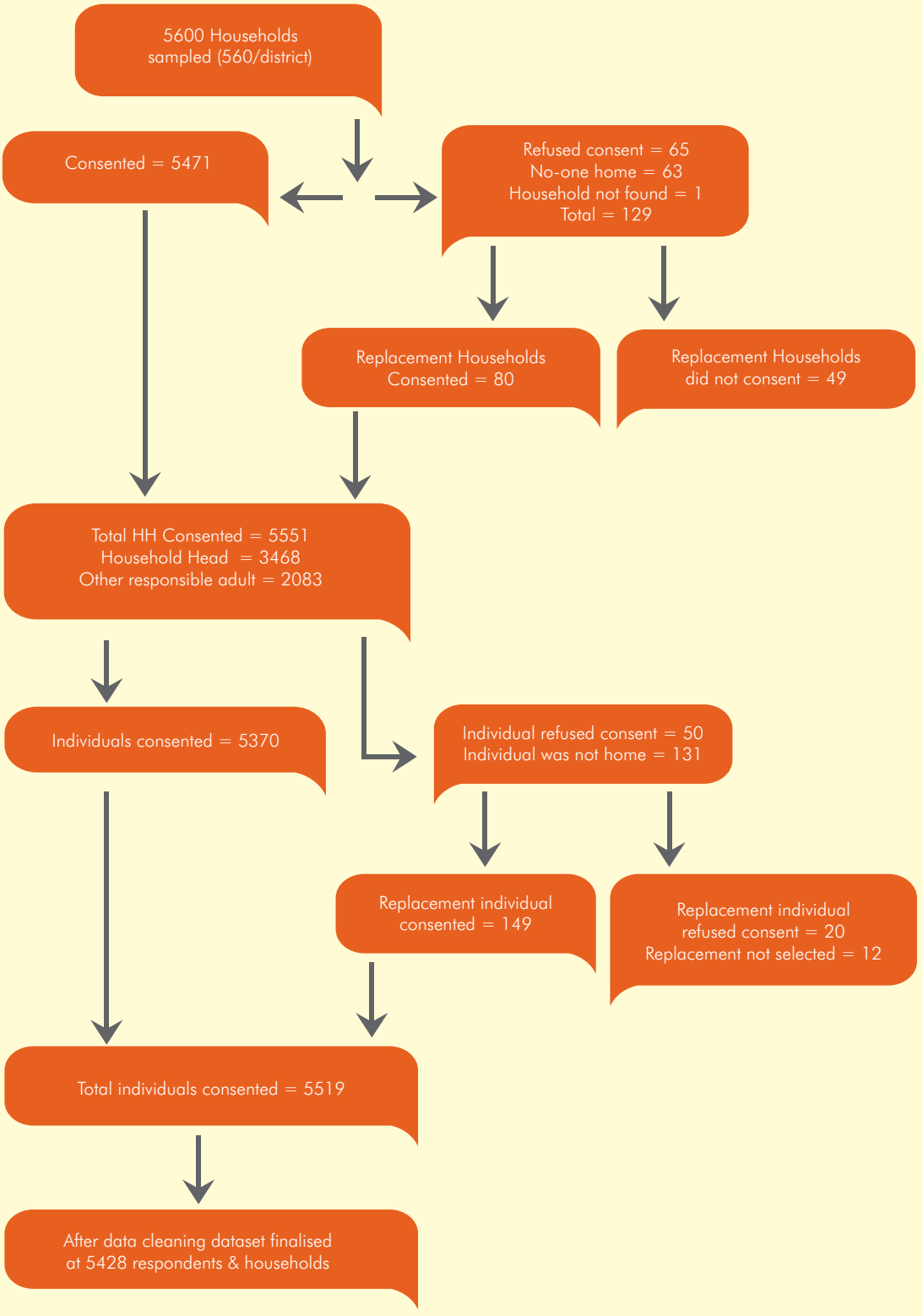
Samples were selected independently for each district in a multi-stage process. In the first stage, a sample of 40 EAs per district was drawn using population proportional to size. In the second stage, 14 households were randomly selected. In rural villages a complete household list was obtained from the village leaders and households selected using a random number table. In urban settings, households were selected using the simple random sampling of 14 GPS points using Epop Software (Epicentre, Paris, France) and Google Earth maps (Kashmir, India) and the house closest to the selected GPS point was approached for interview. In the third stage, a household listing was obtained during the initial interview with the head of the household, and this was used to randomly select one individual 18 years of age or older for a personal interview.

*Appendix 1: 'Explanatory notes on methodology', provides further details on the study methodology, statistical analysis and limitations.*

## RESPONSE RATES

Figure 2.0 illustrates household and individual response rates for the KMHS 2015. A total of 5600 households were selected and approached for interview, of which 129 either refused consent, were not at home, or the household was not found, providing an overall household response rate of 97.7%.

Figure 2.0. Flow diagram of response rate for KMHS 2015



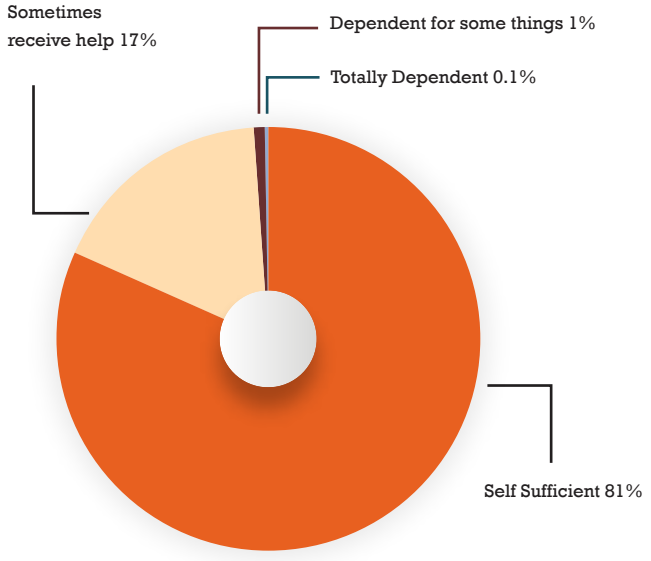
## Household Characteristics (N=5428)

In the KMHS 2015, a household was defined as a group of persons who have slept under the same roof more than three months in the past 12 months and share from the same cooking pot. Of the 5428 surveys analysed, the average household size was 6.5 persons. The household head was asked the degree to which the family depends on others for living, Figure 2.1 presents the results. In addition, household heads were asked how often the family had at least two meals per day; 96% of households reported 'always' with 4% reporting 'sometimes'.

To obtain information on family history of mental illness, the head of the household was asked whether a member of the family had suffered from a mental illness at any point in their life; 27% (n=1466) of households reported that at least one person in their family had suffered from a mental illness.

**27% of households reported a family history of mental illness.**

Figure 2.1 Household dependence on others for living, KMHS 2015




## Respondent Characteristics

The final analysis included results from 5428 personal interviews. The average age of respondents for the personal interview was 39 years (SD:15.4), 68% (n=3706) of respondents were married and 65% (n=3509) were women.

Figures 2.2-2.6 summarise the demographic characteristics of respondents, including their position in the household, marital status, age group, education and main activity. Table 1 in Appendix 2 provide a detailed breakdown of descriptive results.

Figure 2.2. Household position of respondents, KMHS 2015

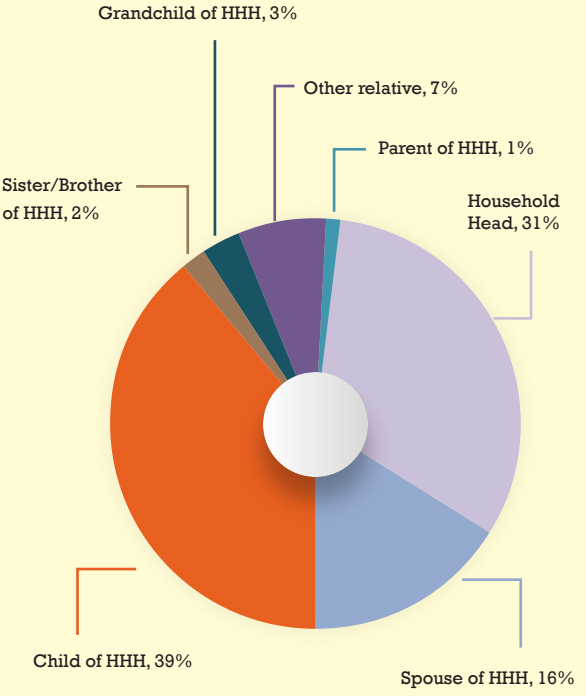
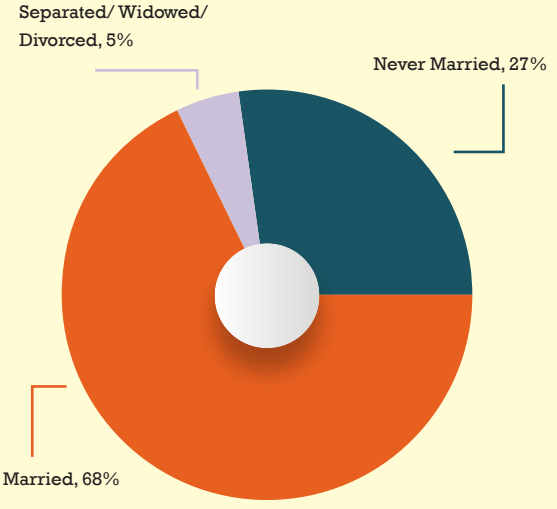
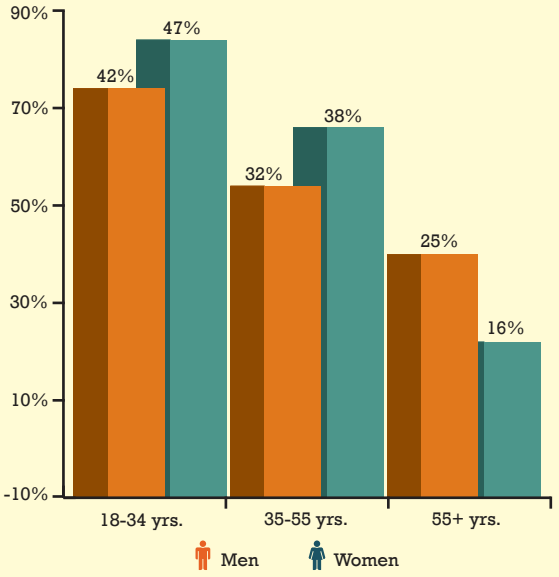



Figure 2.3. Marital status of respondents, KMHS 2015



As shown in Figure 2.4, a high proportion of respondents were between 18-34 years of age[4] (45%, n=2449). Men reported higher education outcomes than women (Figure 2.5), with a high proportion of women reporting no education (42%, n=1460). Some form of employment (full-time, contract work or self-employed) was reported by 38% (n=725) of male respondents with a further 22% (n=429) engaged in family business (Figure 2.6). The majority of women (81%, n=2843) reported home duties as their main activity.

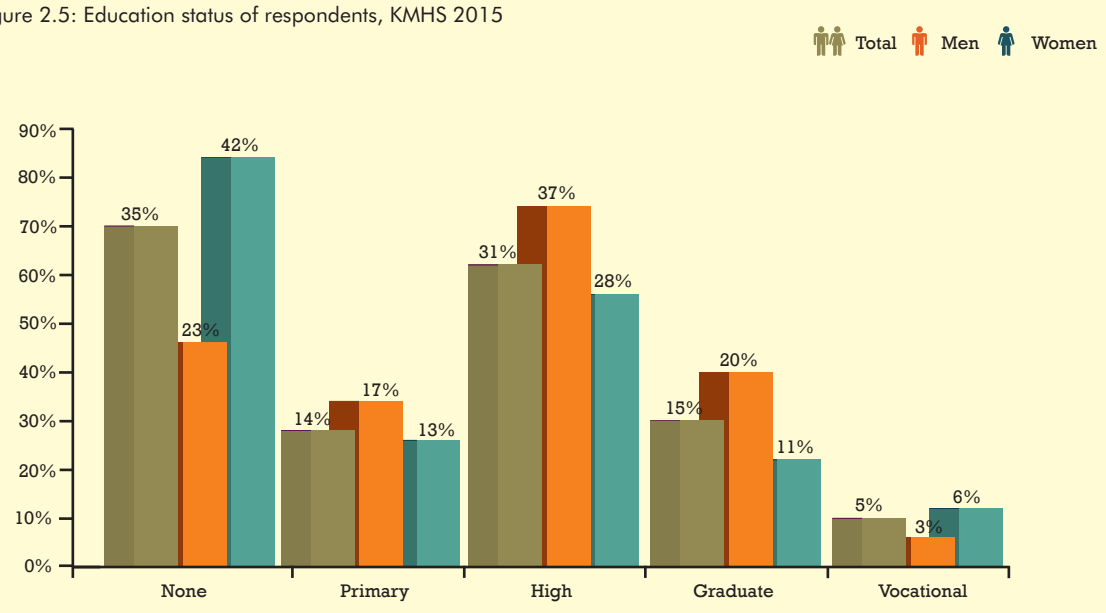
Figure 2.4 Age group and sex distribution of respondents, KMHS 2015




Box 4.0: Summary of respondents (n=5428)

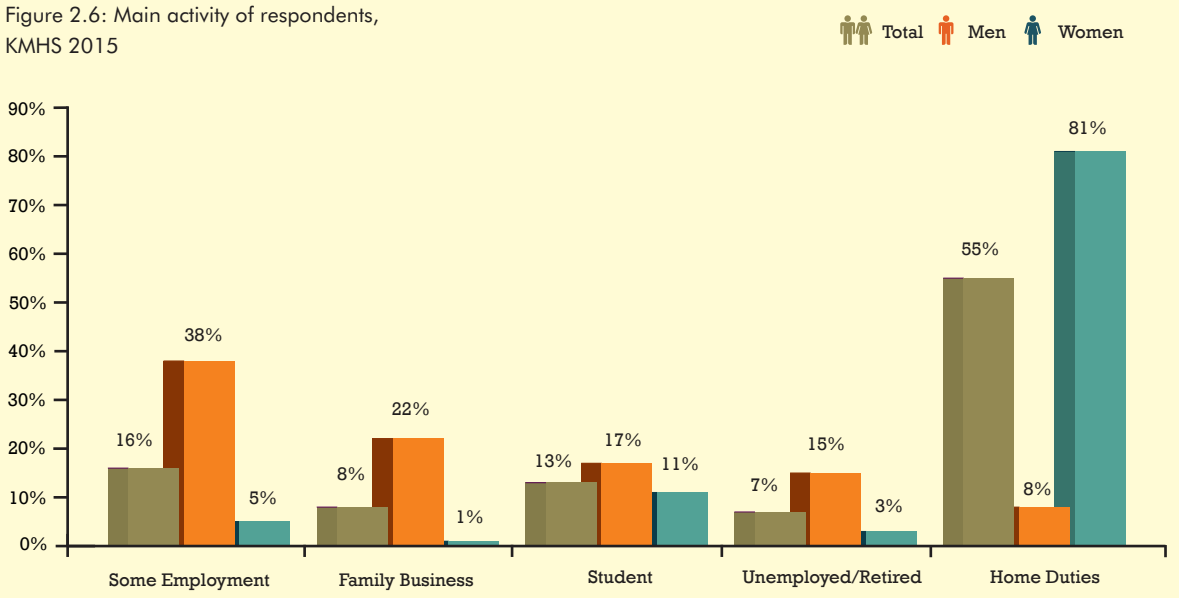
- 3905/5428 (67%) women
- Mean age 39 years (SD: 15.4)
- Minimum = 18 years
- Maximum = 120 years[4]
- Aged 18-34 = 2449/5428 (45%)

Figure 2.5: Education status of respondents, KMHS 2015




4. Many adults in Kashmir do not know their exact age but provide an estimate of how old they think they are. Interpretation of estimations based on age should be made bearing this in mind.

Figure 2.6: Main activity of respondents, KMHS 2015

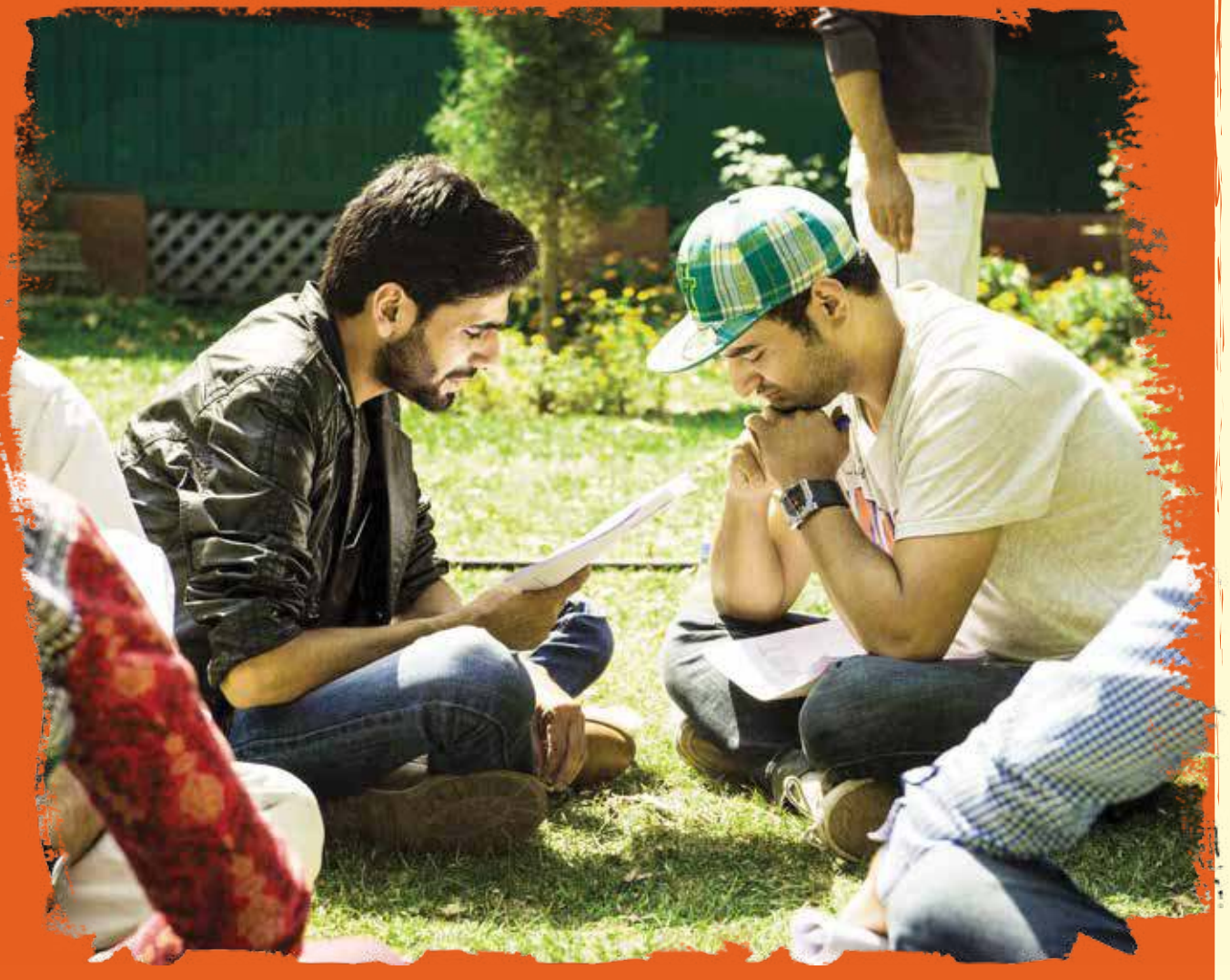


## CHAPTER 3 : THE RESULTS OF THE KMHS 2015

In this chapter we present the results of the KMHS 2015. The section is separated into four parts:

- Prevalence estimates for mental distress in the Kashmir Valley
- Item analysis of the HSCL-25 and HTQ-16
- Problems of daily life and coping strategies
- Physical Health and Functionality
- Risk factors for mental distress

Key findings will be presented separately for each set of results. Appendix 2 provides supplementary tables for the statistical analysis of results presented in this chapter.



## Prevalence of mental distress among adults living in the Kashmir Valley, 2015

***Key Findings***

- 1.8 million (45%) adults in the Kashmir Valley have significant symptoms of mental distress.
- Approximately 1.6 million adults (41%) in the valley are living with significant symptoms of depression, with 415,000 (10%) meeting all the diagnostic criteria for severe depression.
- An estimated 1 million adults (26%) in the valley are living with significant symptoms of an anxiety related disorder.
- Nearly 1 in 5 adults (19%) or 771,000 individuals in the Valley are living with significant PTSD symptoms, with 248,000 (6%) meeting the diagnostic criteria for PTSD.
- High rates of co-morbidity of symptoms of depression, anxiety and PTSD were found in adults living in the valley.
- The districts of Baramulla and Badgam reported the highest prevalence rates of symptoms for all three mental disorders.

This section presents the prevalence rates of depression, anxiety and PTSD in the Kashmiri adult population based on validated and international cut-off scores for the HSCL-25 and HTQ-16, respectively. It is important to note that the prevalence rates based on cut-off scores from screening tools represent very symptomatic individuals who may meet the DSM-IV (Diagnostic and Statistical Manual of Mental Disorders, fourth edition) criteria. (18) Mollica et al. conclude that when symptoms bother an individual enough that they are scoring above the validated cut-off score, a clinician would regard them as significant and recommend some form of intervention. (18) The term 'probable case' is used throughout this report for persons scoring above the screening tool cut-off scores.

In addition, the HSCL-25 and HTQ-16 have diagnostic capacity when classification is not based on a cut-off score but on a complex algorithm involving a combination of symptoms included in the DSM-IV criteria for depression and PTSD. We re-analysed survey data based on these diagnostic symptom algorithms in order to estimate prevalence of severe depression and PTSD; these prevalence rates are presented later in this section.

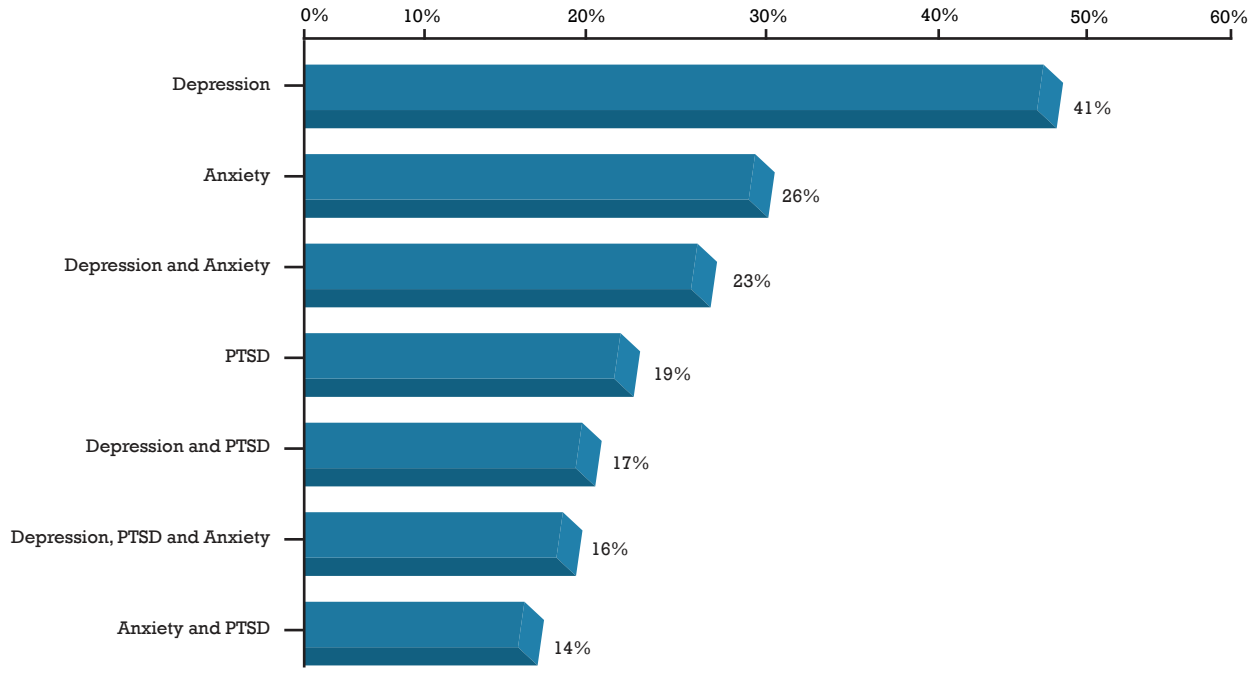
It is recognised globally that the prevalence rates for mental disorders are different for men and women, with women often having higher rates of depression than men. (19) The data from this survey is analysed in three ways: as a pooled estimate including the full sample; in a sex-specific breakdown looking at men and women separately; and in a district-level analysis estimating prevalence rates in each of the 10 districts.

Nearly 1.8 million (45%) adults in the Kashmir Valley are experiencing symptoms of mental distress, with 41% exhibiting probable depression, 26% probable anxiety and 19% probable PTSD.[5]

High rates of co-morbidity of mental disorders are recognised in the literature, with individuals often experiencing depression, anxiety disorders and PTSD concurrently. (20-22) We estimated co-morbidity for depression, anxiety and PTSD in Kashmiri adults and our results were consistent with these findings; 89% of identified probable PTSD cases on the HTQ-16 were also classified as a probable case of depression, and 71% were classified as a probable case of anxiety on the HSCL-25. Similarly, 90% who met the criteria for a probable case of anxiety on the HSCL-25 also met the criteria for depression; 16% of Kashmiri adults were classified as a probable case of all three disorders. Figure 3.0 displays the prevalence of co-morbidity within the Kashmiri adult population.

5. Table A2 in Appendix 2 provides standard errors and 95% confidence intervals.

Figure 3.0: Weighted prevalence estimates of psychiatric co-morbidity in adults living in the Kashmir Valley, KMHS 2015

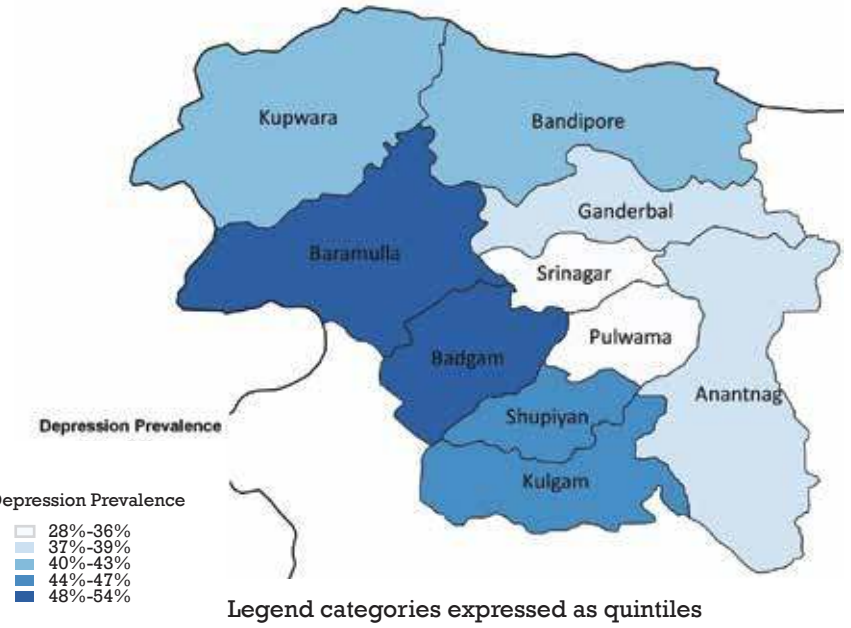



## District prevalence of depression, anxiety and PTSD in the Kashmir Valley in 2015

### *Depression*

The proportion of the adult population in the Kashmir Valley suffering from symptoms of probable depression in 2015 was 41%, representing 1.6 million adults. Estimates for districts range from 28% in Srinagar to 54% in Badgam. Figure 3.1 illustrates that prevalence rates for depression were highest in the districts of Badgam and Baramulla.[6]

Figure 3.1: Weighted prevalence estimates of symptoms of depression among adults in the Kashmir Valley, KMHS 2015.




Legend categories expressed as quintiles

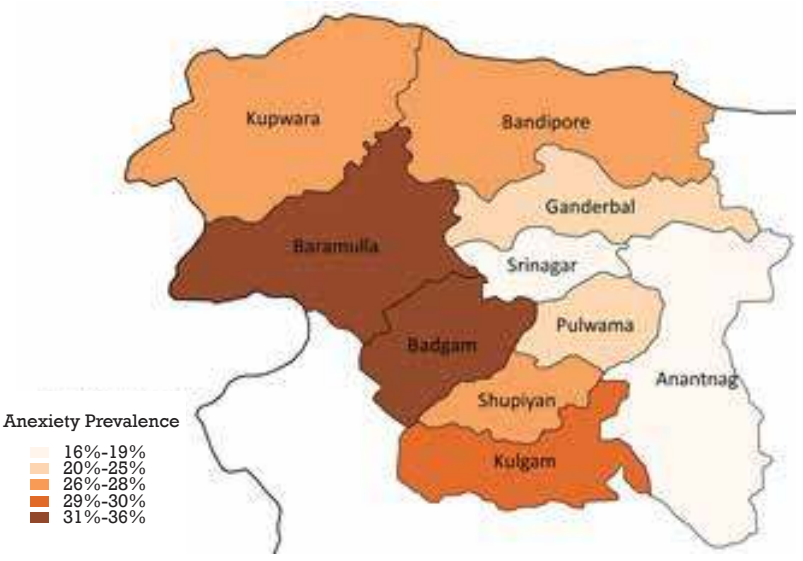
Disclaimer: The place names and boundaries shown here do not reflect any position by MSF on their legal status

6. Table A2 in Appendix 2 provides a summary of prevalence rates for anxiety, depression and PTSD, including SEs and 95% CIs for each district.

## *Anxiety*

Approximately 1 million adults (26%) in the Kashmir Valley were exhibiting signs of a probable anxiety-related disorder. Estimates for districts range from 16% in Srinagar to 36% in Badgam. The pattern across districts was similar to that identified for depression, with Baramulla and Badgam experiencing the highest prevalence rates (Figure 3.2).

Figure 3.2: Weighted prevalence estimates of symptoms of anxiety among adults in the Kashmir Valley, KMHS 2015




Legend categories expressed as quintiles

## *PTSD*

The prevalence of PTSD in the Kashmiri adult population was estimated to be 19%, representing 771,000 adults. Estimates for districts range from 11% in Srinagar to 27% in Baramulla. Consistent with the high proportion of co-morbidity and multi-morbidity in those identified as probable PTSD cases, the prevalence distribution pattern across districts is similar to that found for anxiety and depression (Figure 3.3).

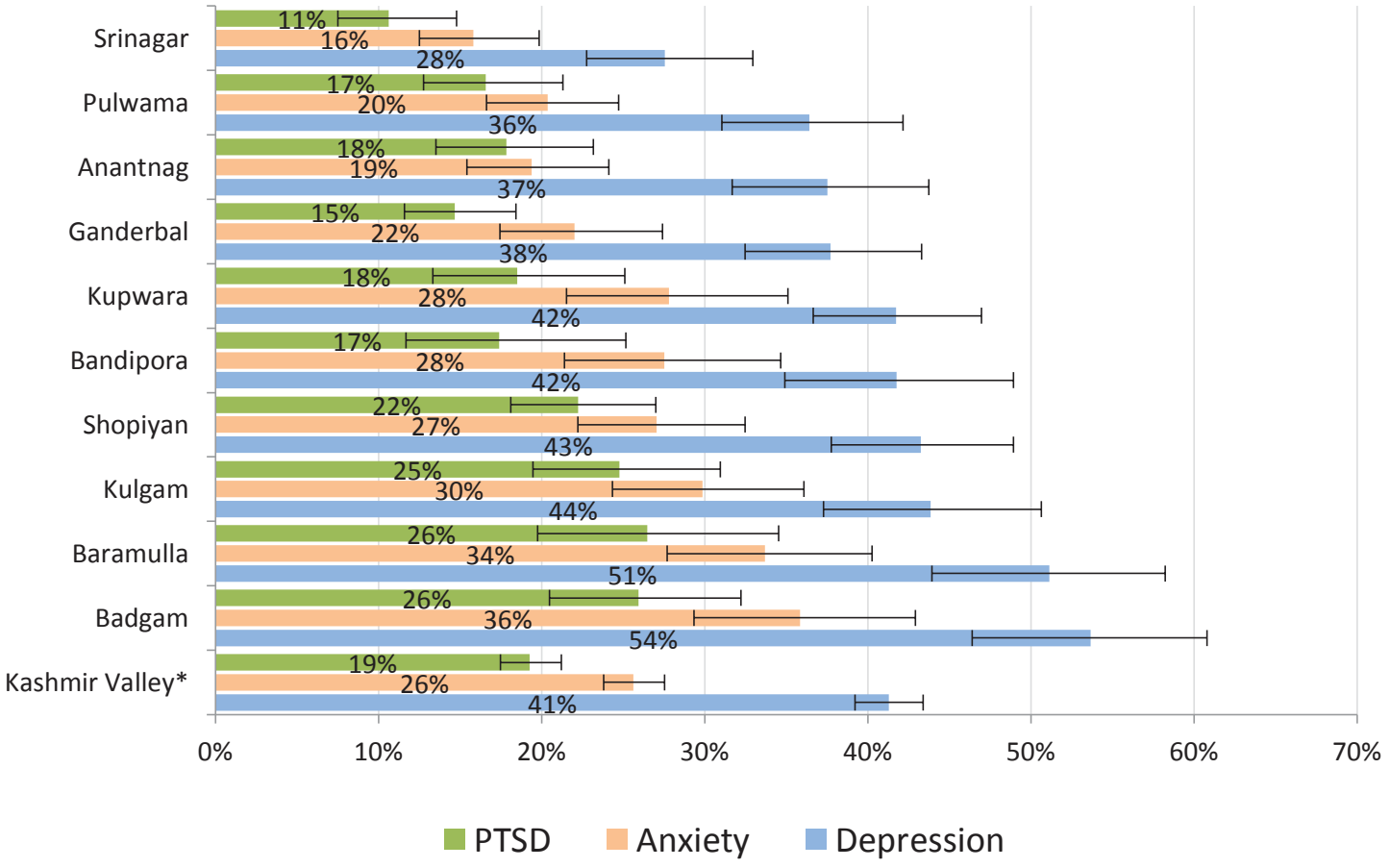
Figure 3.3: Weighted prevalence estimates of symptoms of PTSD among adults in the Kashmir Valley, KMHS 2015


Legend categories expressed as quintiles

Disclaimer: The place names and boundaries shown here do not reflect any position by MSF on their legal status

A detailed prevalence breakdown for each district is provided in Figure 3.4

Figure 3.4: Weighted prevalence rates of Depression, Anxiety and Posttraumatic stress symptoms with 95% Confidence Intervals, KMHS 2015




*Pooled prevalence rates for the Kashmir Valley, bars reflect 95% Confidence Intervals

## *Severe Mental Disorder*

Although they are primarily screening tools, the HSCL-25 and HTQ-16 have been shown empirically to have diagnostic capacity. (18) The HSCL-25 and HTQ-16 were converted into categorical instruments by the Harvard Trauma Group. A categorical scale does not rely on a cut-off score but uses symptom counts based on diagnostic criteria from the DSM-IV. The Harvard Trauma Group developed diagnostic algorithms for the HTQ-16 and HSCL-25 based on a pattern of responses that conforms to pre-established diagnostic criteria for depression and PTSD; however, at the time of this survey the diagnostic validity of the anxiety items had yet to be tested. (18) Diagnostic criteria for PTSD are based on symptoms of re-experiencing, avoidance and arousal (Box 5.0). The diagnostic criteria for depression are based on a complex combination of symptoms; we refer to Mollica et al., *Measuring trauma, measuring torture: instructions and guidance on the utilization of the Harvard Program in Refugee Traumas' versions of the Hopkins Symptoms Checklist-25 (HSCL-25) and the Harvard Trauma Questionnaire (HTQ-16)* for the details (2004: p129). (18) Survey data was re-analysed using the diagnostic algorithms in order to determine the prevalence of severe depression and anxiety in the adult population of Kashmir.

*10% of adults in the Kashmir Valley are suffering from severe depression and 6% are suffering from severe PTSD.*

Based on these criteria, 10% of adults (415,000) in the Kashmir Valley met all the diagnostic criteria for severe symptoms of depression and 6% (248,000) met all the diagnostic criteria to PTSD. It is important to note that nearly 4% met all the diagnostic criteria for both severe depression and PTSD.

Box 5.0: PTSD diagnostic algorithm for the HTQ-16

1. *A score of 3 or more for at least one of the re-experiencing symptoms, and;*
2. *At least three of the avoidance/numbing symptoms, and;*
3. *At least two of the arousal symptoms.*

## ITEM ANALYSIS OF THE HSCL-25 AND HTQ-16

**Key findings**

- A high proportion of Kashmiri adults report regularly experiencing headaches (62%), heart palpitations (47%), excessive worrying (61%), feeling low in energy (64%), feeling irritable and having outbursts of anger (65%), and having difficulty concentrating (52%).
- Suicidal ideation was reported by 12% of Kashmiri adults, 94% of whom were classified as a probable case for at least one of the three disorders.

The following section provides an overview of the item analysis from the HSCL-25 and HTQ-16. The weighted mean score of each tool is provided, along with the frequencies of responses for each item. In addition, the most and least frequently endorsed symptoms are presented for each screening tool.

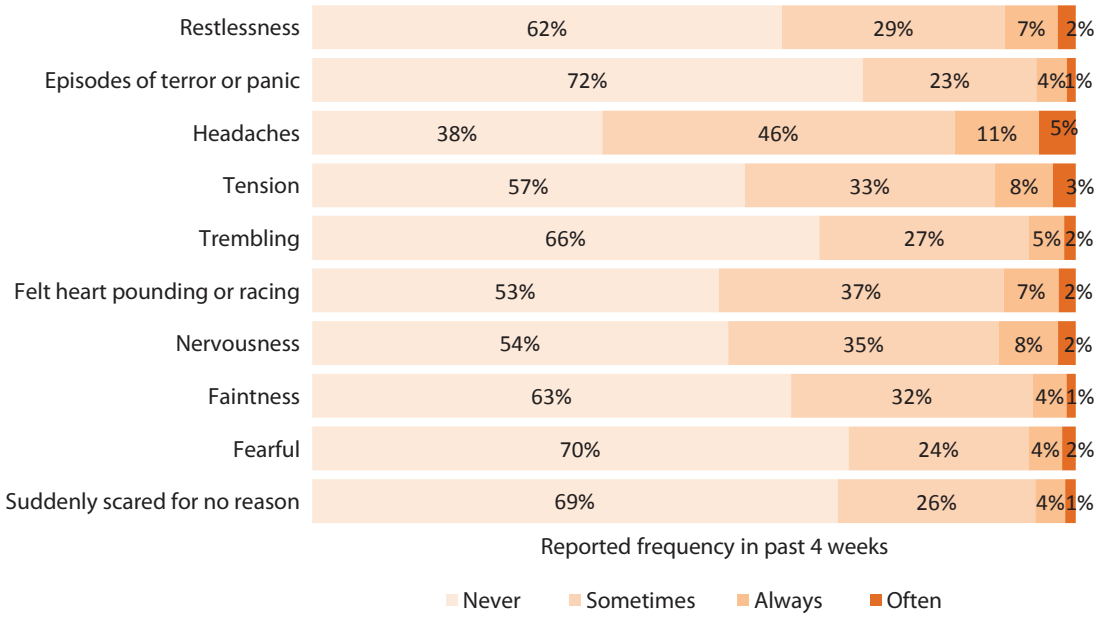
### *HSCL-25*

**Anxiety (HSCL-25 items 1-10)**

The mean score for the HSCL-25 anxiety items (items 1-10) was 1.50.[7] A total of 426 (22%) men and 1312 (37%) women scored above the Kashmiri validated cut-off score of 1.75 for anxiety. Female respondents scored significantly higher than male respondents.[8] The most frequently endorsed items for the anxiety items (items 1-10) of the HSCL-25 were headaches (62%), and heart pounding or racing (47%); conversely episodes of terror or panic (30%) and feeling fearful (28%) were the items least frequently endorsed on the anxiety subscale (Figure 3.5).

7. SD: 0.48; 95%CI: 1.48-1.52.
8. Women M: 1.63; SD: 0.50; 95%CI: 1.61-1.66 and Men M: 1.44; SD: 0.43; 95%CI: 1.41-1.46; Mann Whitney: $p<0.01$.

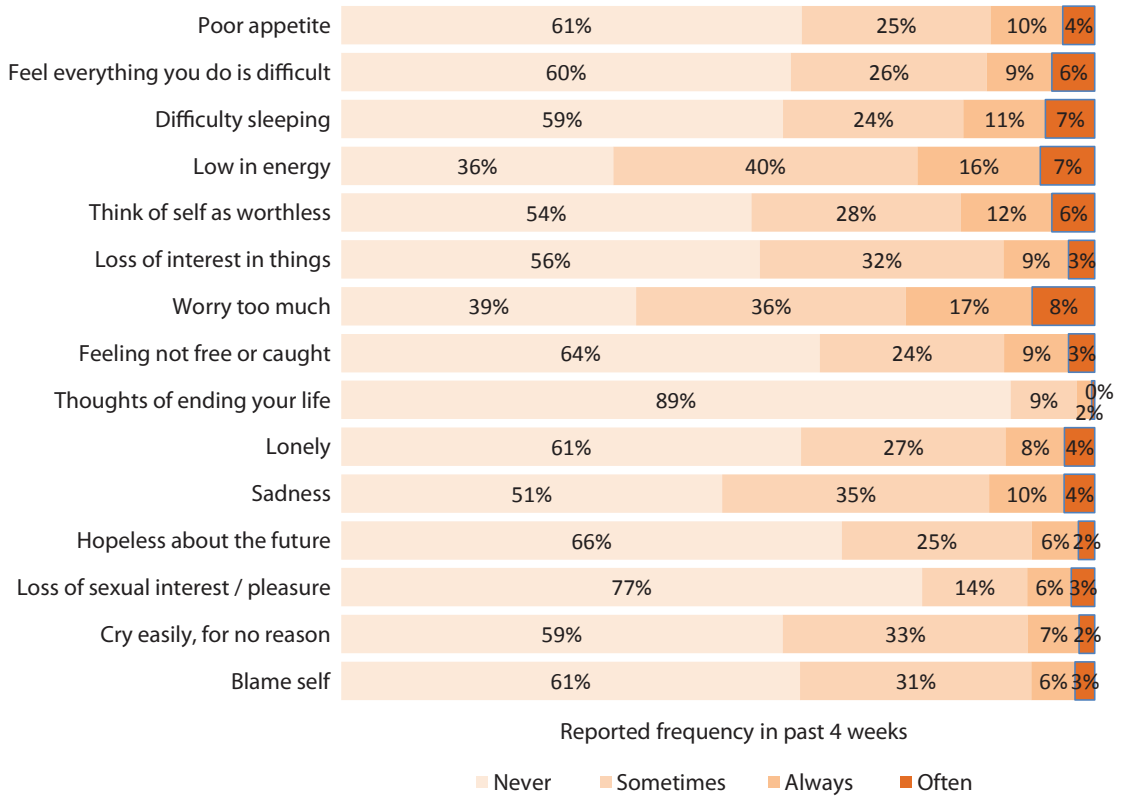
Figure 3.5: Weighted frequencies of item responses on the HSCL-25 anxiety items 1-10, KMHS 2015




## Depression (HSCL-25 ITEMS 11-25)

The mean score for the HSCL-25 depression items (items 11-25) was 1.58.[9] A total of 752 (39%) men and 1172 (50%) women scored above the Kashmiri validated cut-off score of 1.57. Female respondents scored significantly higher than male respondents.[10] The most frequently endorsed items for the depression subscale (items 11-25) were worrying too much (61%) and feeling low in energy or slowed down (64%). Conversely, thinking about ending your life (11%) and loss of sexual interest or pleasure (23%) were the items least frequently endorsed by study participants (Figure 3.6).

Figure 3.6: Weighted frequencies of item responses on the HSCL-25 depression items 11-25, KMHS 2015




9. SD: 0.51; 95%CI:1.56-1.60.

10. Women M: 1.66; SD: 0.51; 95%CI: 1.63-1.68 and Men M: 1.54; SD :0.50; 95%CI: 1.51-1.57; Mann Whitney: p<0.01.

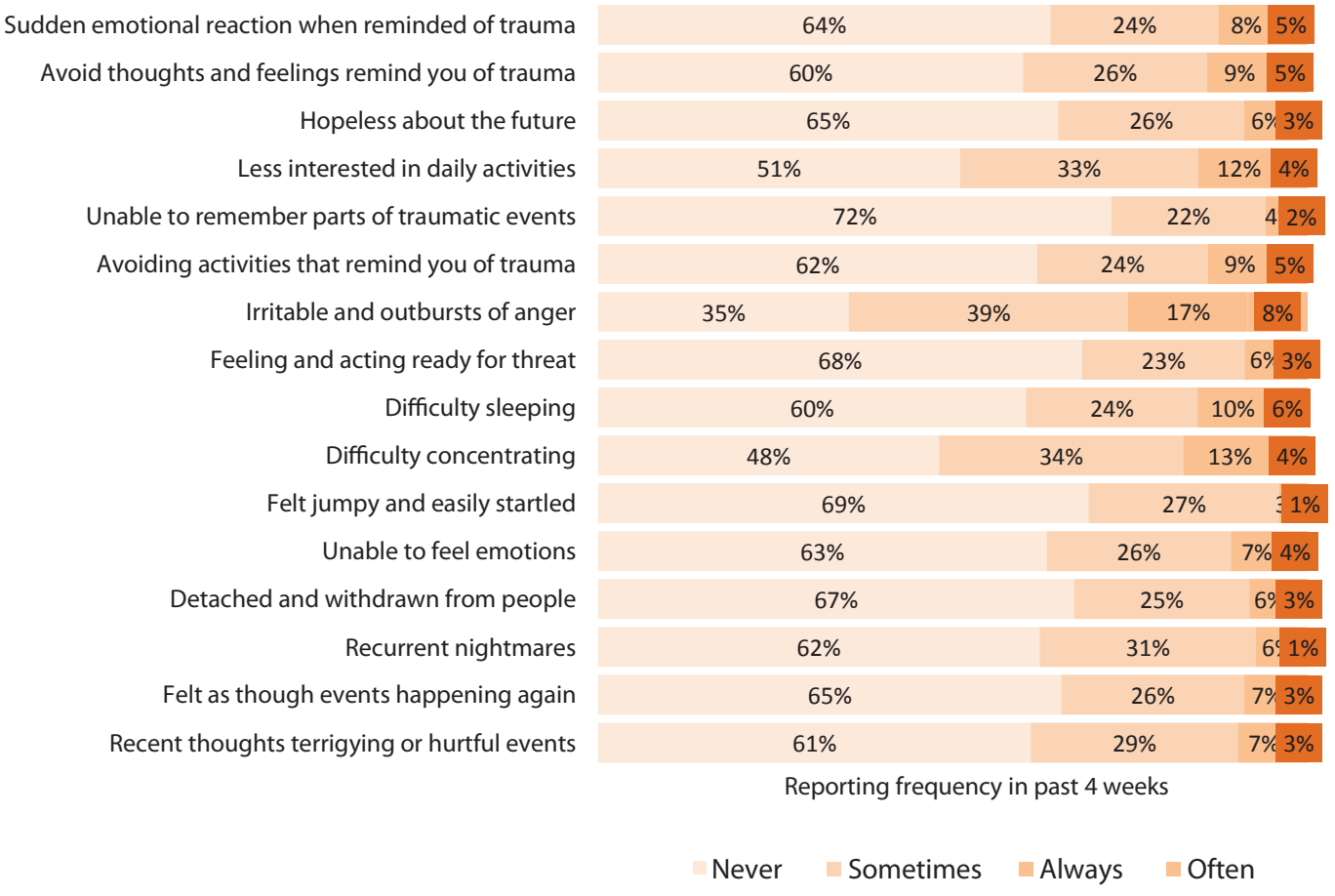
### Suicidal Ideation

We found 12% of the Kashmiri adult population responded positively to the question from HSCL-25, *in the past four weeks how often have you had thoughts of killing yourself ?;* 94% of these respondents were classified as a probable case for at least one of the three disorders.

## *PTSD (HTQ-16)*

The mean score for the HTQ-16 was 1.55.[11] A total of 353 (18%) men and 831 (24%) women scored above the international cut-off score of 2.0. Female respondents scored significantly higher than male respondents.[12] The most frequently endorsed items for the HTQ-16 were feeling irritable and having outbursts of anger (65%) and experiencing difficulty concentrating (52%). Conversely, the least frequently endorsed items were unable to remember parts of a traumatic event (28%) and feeling jumpy or easily startled (31%) (Figure 3.7).

Figure 3.7: Weighted frequencies of item responses on the HTQ-16 for PTSD, KMHS 2015




11. SD: 0.41; 95%CI: 1.52-1.57.

12. Women M: 1.61; SD: 0.50; 95%CI: 1.58-1.63 and Men M: 1.55; SD:0.47; 95%CI: 1.48-1.55; Mann Whitney: $p<0.01$.

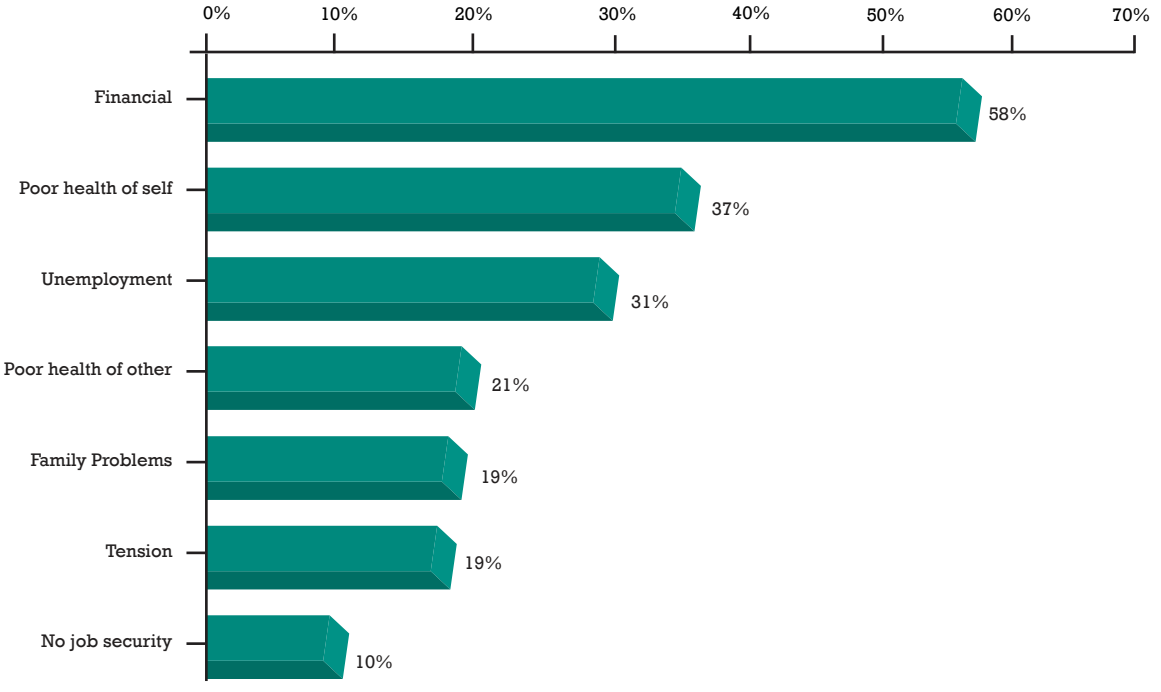
## PROBLEMS OF DAILY LIFE AND COPING STRATEGIES

***Key findings***

- Common problems of daily life experienced by Kashmiri adults included financial and family issues, poor physical health, unemployment, and tension.
- The most commonly reported coping strategies were prayer, talking to a friend or family member, trying to keep busy, social isolation and going for a walk.
- One in five men reported using tobacco as a coping strategy.

The lists of common problems of daily life and coping strategies were established during pre-survey free-listing interviews and FGDs. Men and women were asked to list the main problems they faced in everyday life. These were ranked and a list of the 15 most commonly mentioned problems and 20 most commonly mentioned coping strategies were added to the questionnaire. During the survey, the respondent was asked to list the main problems they faced in everyday life and the enumerator marked those mentioned on the questionnaire. This process was repeated for coping strategies. Figures 3.7 and 3.8 display the common problems experienced by Kashmiri adults and coping strategies utilised.

Figure 3.8: Weighted proportion of problems of daily life identified by adults in the KMHS, 2015

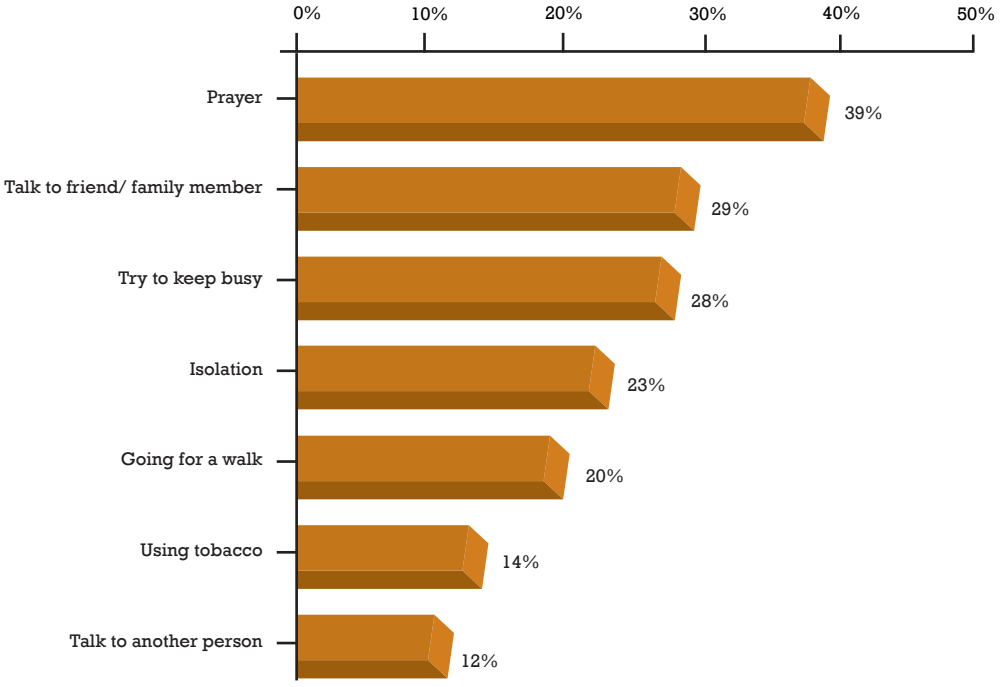



The problems of daily life faced by Kashmiri adults relate to financial issues, poor physical health and unemployment. One-third of Kashmir men and nearly half of Kashmiri women are suffering from poor physical health. This was common to all age groups, with the highest proportion in the 35-54 age group.

Both men and women state unemployment as a significant problem of daily life.

In order to cope with stress and tension, Kashmiri adults pray, talk to family members or friends and try to keep busy.

Figure 3.9: Weighted proportion of coping strategies identified by adults, KMHS 2015




*Men and women utilise similar coping strategies, with the exception of using tobacco (21% men, 4% women) and visiting a mosque or shrine (12% men, 2% women).*

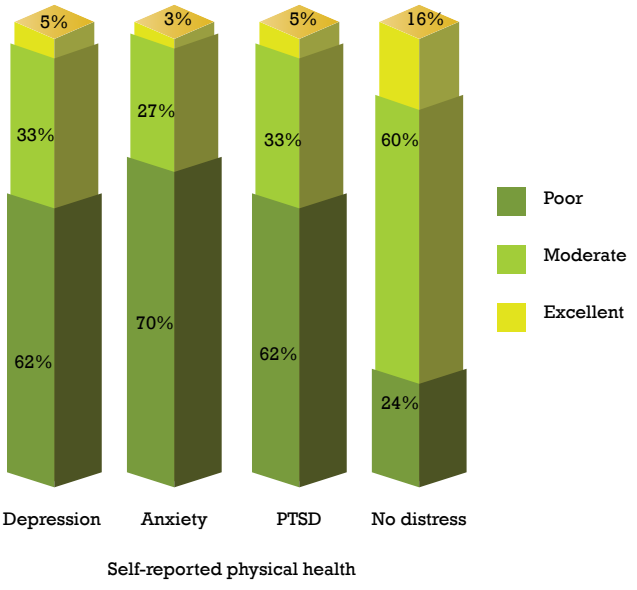
## Physical Health

Respondents were asked to self-rate their own physical health as excellent, moderate or poor. The questionnaire also included a section on functionality in the past four weeks, to correspond with the period of symptom assessment in the screening tools. There was a statistically significant relationship between self-reported poor physical health and being classified as having probable depression, anxiety and/or PTSD.[13]

## Functionality

We measured daily functionality by asking respondents about the effort required to complete daily tasks. A daily 'usual' task list for men and women was established while developing the questionnaire during FGDs. After reporting on the task list with the aid of a visual cue card (Appendix 1), the respondent was asked two questions:

Figure 3.10: Weighted proportion of adults in the Kashmir Valley with mental distress, by self-reported physical health status, KMHS 2015

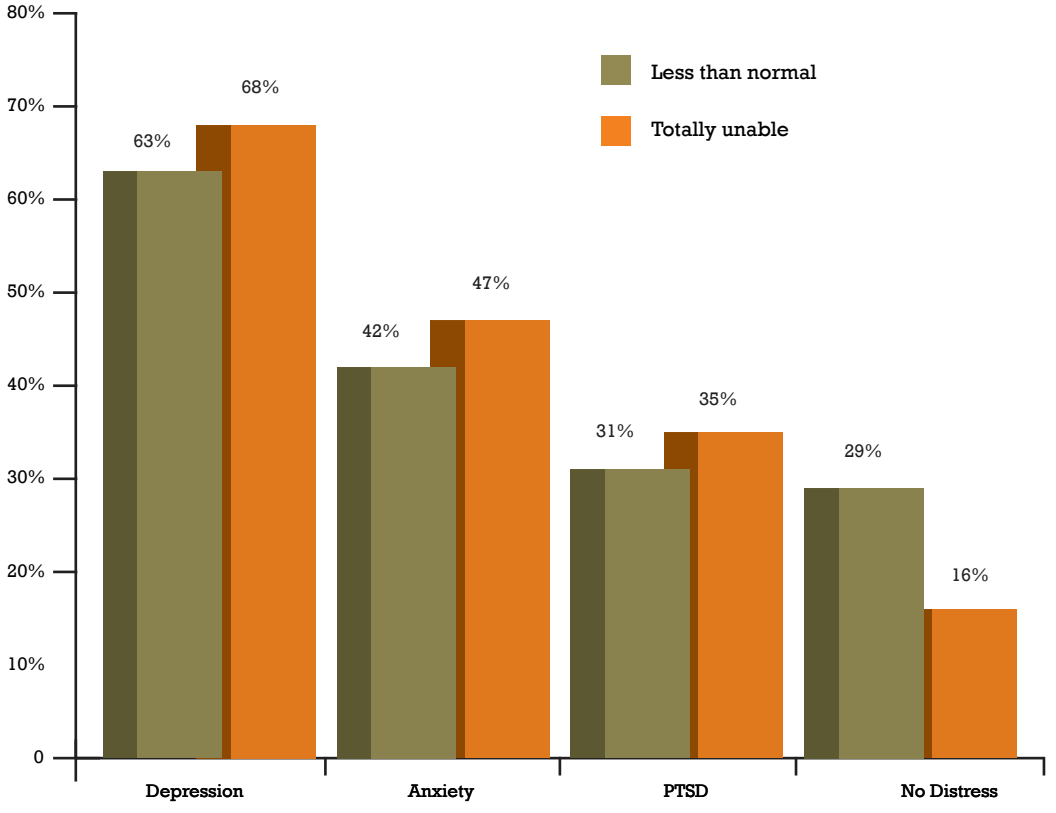



13. Anxiety (X2: 810.6, p<0.001), depression (X2: 871.1, p<0.001), PTSD (X2: 810.6, p<0.01).

- In the past four weeks how much of the time did you have to cut down on your normal daily activities because you had 'tension' or 'parishani'?
- In the past four weeks how much of the time were you totally unable to carry out your normal daily activities because you had 'tension' or 'parishani'?

A five-point Likert scale was used to record responses and those coded as 'all of the time' or 'most of the time' were combined and tested for an association with depression, anxiety and PTSD. There was a statistically significant relationship between reduced functionality and being classified as having probable depression, anxiety, and/or PTSD.[14]

Figure 2.11: Weighted proportion of adults in the Kashmir Valley with mental distress, by self-reported functionality in the past four weeks, KMHS 2015




Of the adults meeting the diagnostic criteria for severe depression and severe PTSD, over 80% reported less than normal functionality in the previous four weeks (88% and 80%, respectively) and over 60% reported being totally unable to carry out normal activities in the previous four weeks (66% and 63%, respectively).

14. Less than normal functionality: Anxiety (X2: 747.7, p<0.001), depression (X2: 1018.6, p<0.001), PTSD (X2: 481.6, p<0.001); totally unable to carry out normal daily activities: Anxiety (X2: 753.4, p<0.001), depression (X2: 581.0, p<0.001), PTSD (X2: 399.0, p<0.001).

## RISK FACTORS FOR MENTAL DISTRESS

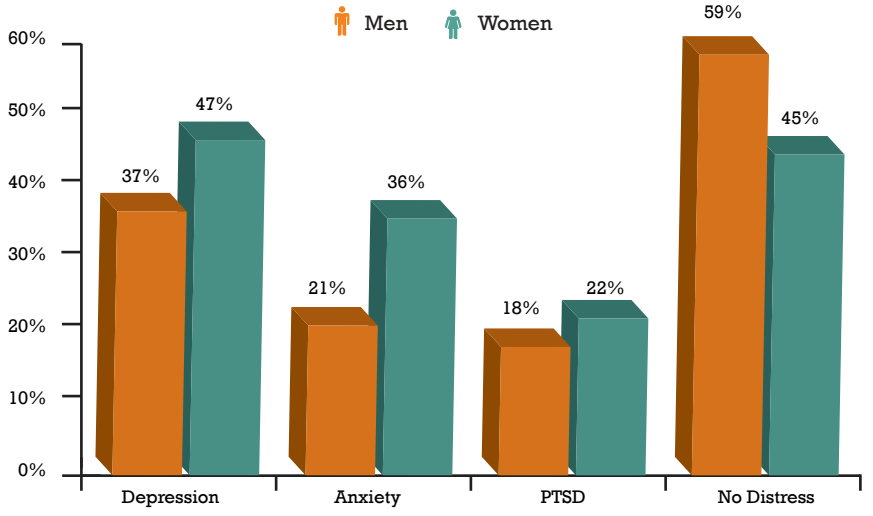
***Key findings***

- The rate of mental distress is higher among women than men.
- The proportion classified as having mental distress increased with age.
- There is a higher prevalence of mental distress among people with poor education outcomes than those with secondary or tertiary education.
- Individuals who have been divorced, widowed or separated are more likely to be identified as having mental distress than those that have never been married.
- Over 60% of individuals reporting mental distress also report poor physical health.
- 73% of adults classified as having mental distress reported decreased daily functionality.
- 80% of adults meeting the diagnostic criteria for depression and PTSD reported less than normal daily functioning.

### *Mental Distress: Demographic characteristics*

This section summarises the patterns of mental distress according to the demographic characteristics of the population. Figure 3.12 illustrates the proportion of Kashmiri adults identified as having probable depression, probable anxiety and/or probable PTSD. It is clear that a higher proportion of women were classified as having all three mental disorders. This difference between the sexes was significant for all three disorders.[15]

Figure 3.12: Weighted proportion of adults in the Kashmir Valley with mental distress, by sex, KMHS 2015

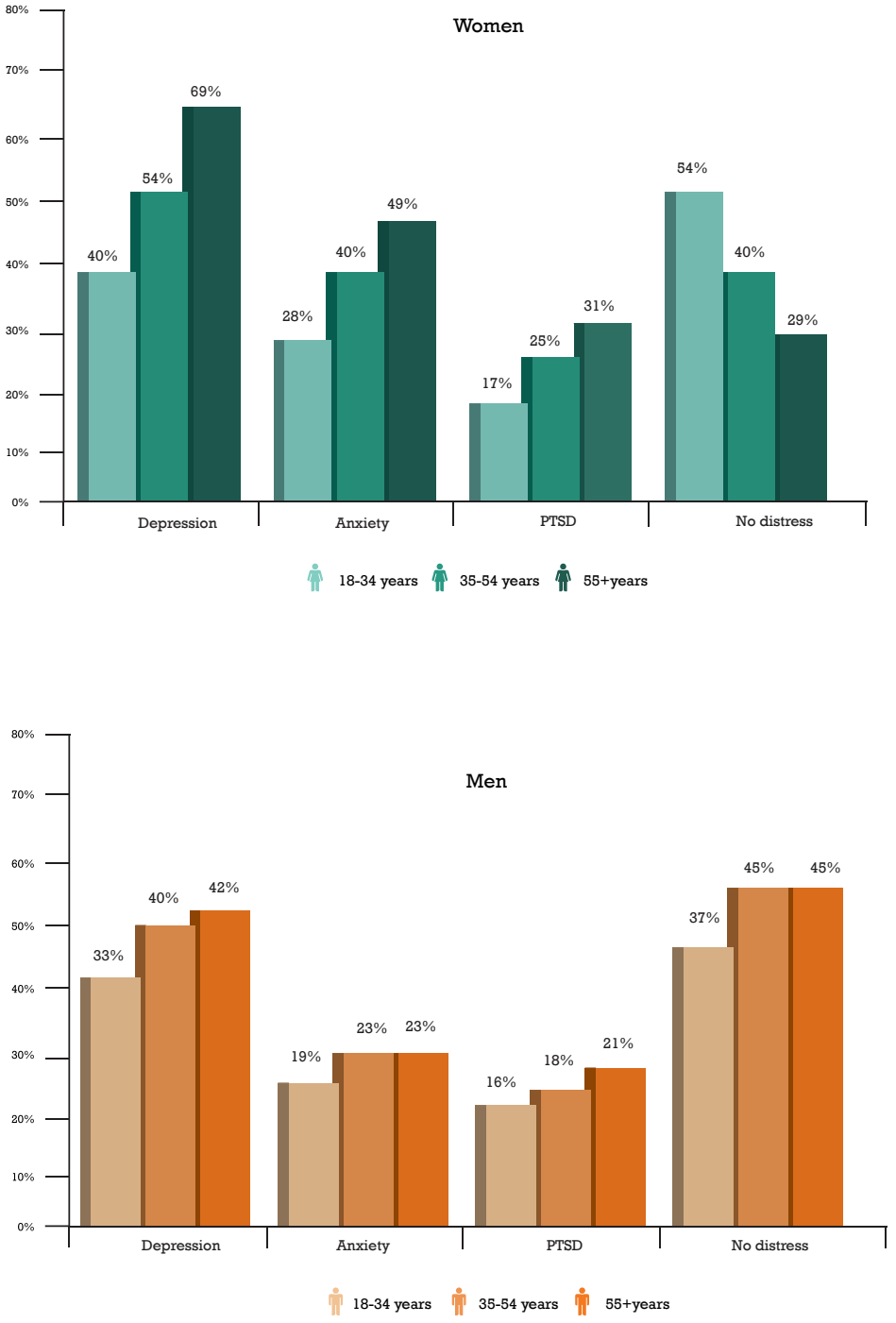



The proportion classified as having a probable disorder increased with age (Figure 3.13). The differences in prevalence across age groups are all highly significant.[16]

15. Anxiety (X2: 138.4, p<0.001), depression (X2: 80.5, p<0.001) PTSD (X2: 16.7, p<0.002).

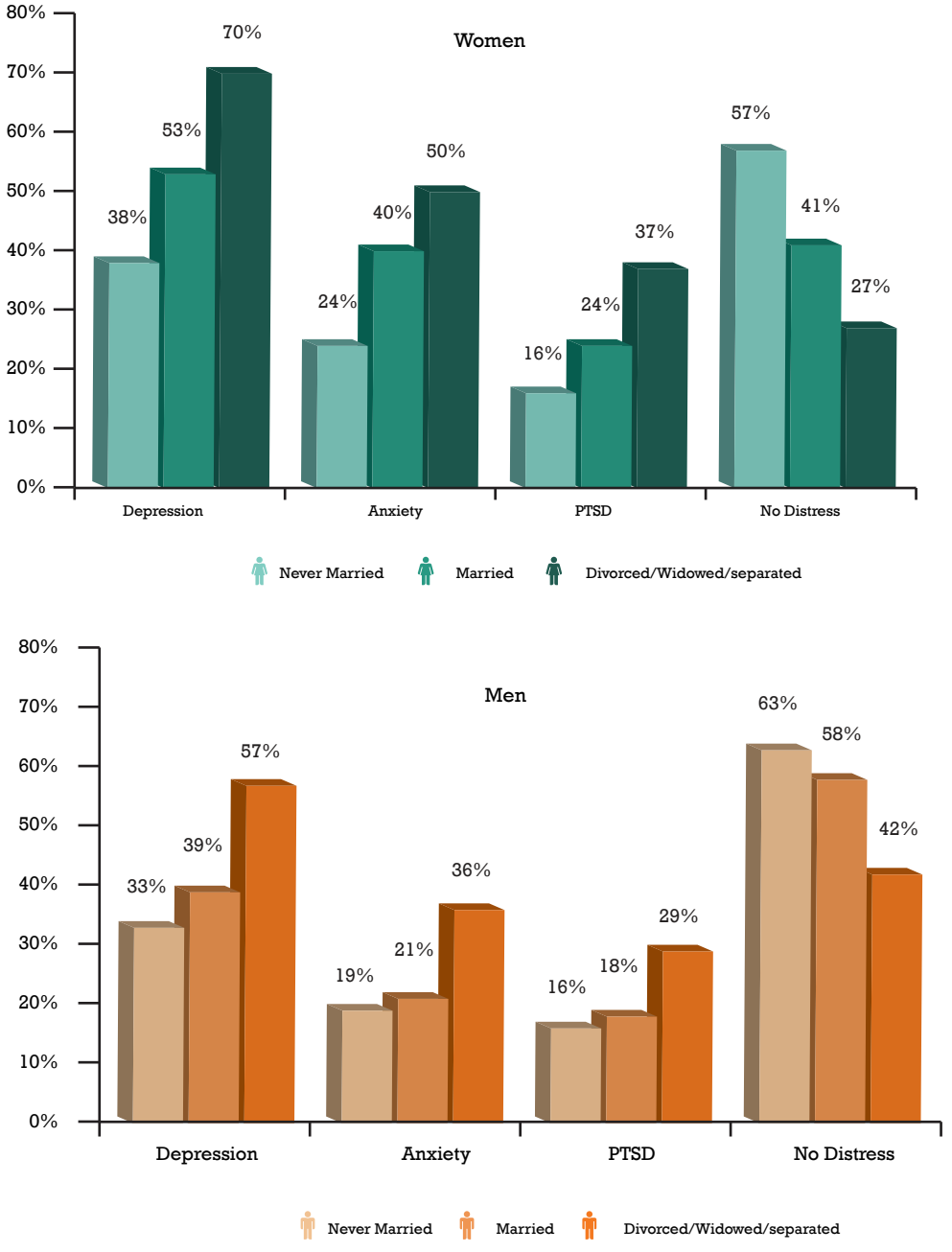
16. Anxiety (X2: 40.7, p<0.001), depression (X2: 75.1, p<0.001) PTSD (X2: 30.5, p<0.001).

Figure 3.13: Weighted proportion of adults in the Kashmir Valley with mental distress, by age group and sex, KMHS 2015



Figures 3.14 and 3.15 show the proportion of Kashmiri adults classified as having probable depression, anxiety and/or PTSD by other demographic variables. Differences between categories of marital status are all highly significant,[17] with divorced, widowed or separated individuals more likely to be identified as having a disorder than those who were currently married or had never been married. The differences across education categories are also all highly significant,[18] with people with higher education outcomes (secondary and tertiary) less likely to be identified as having a probable mental disorder, compared to people with no education.

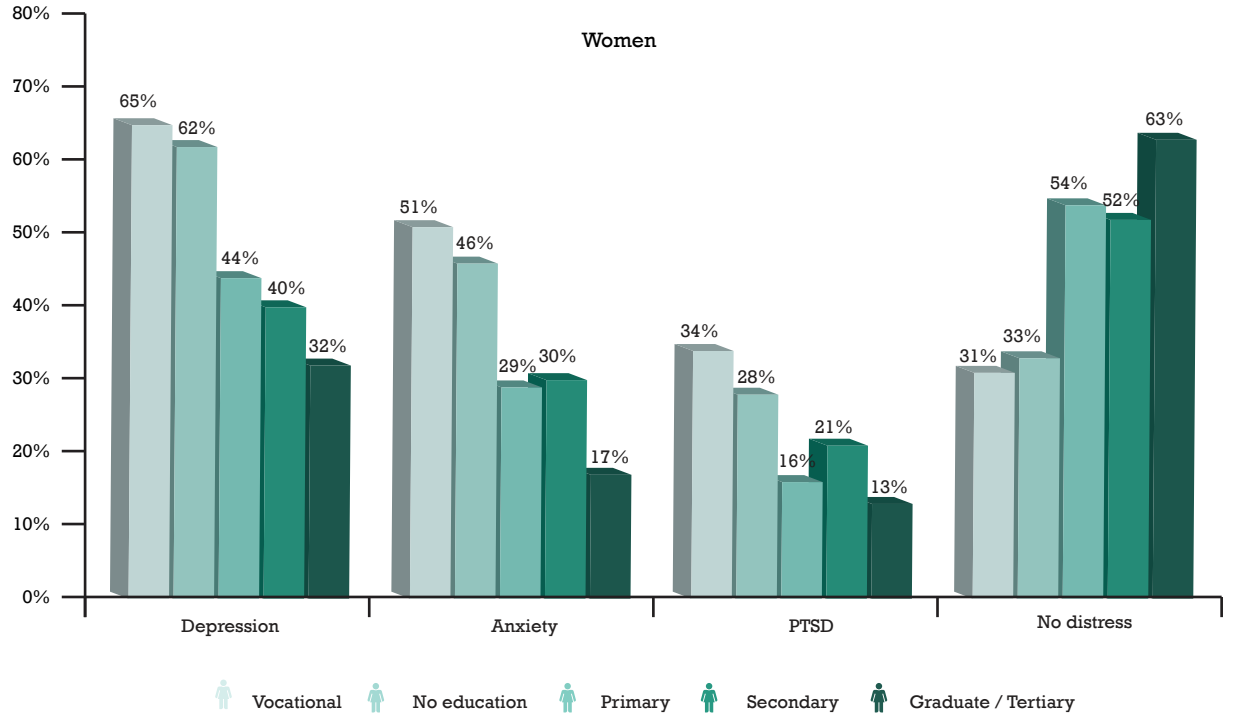
Figure 3.14: Weighted proportion of adults in the Kashmir Valley with mental distress, by marital status and sex, KMHS 2015

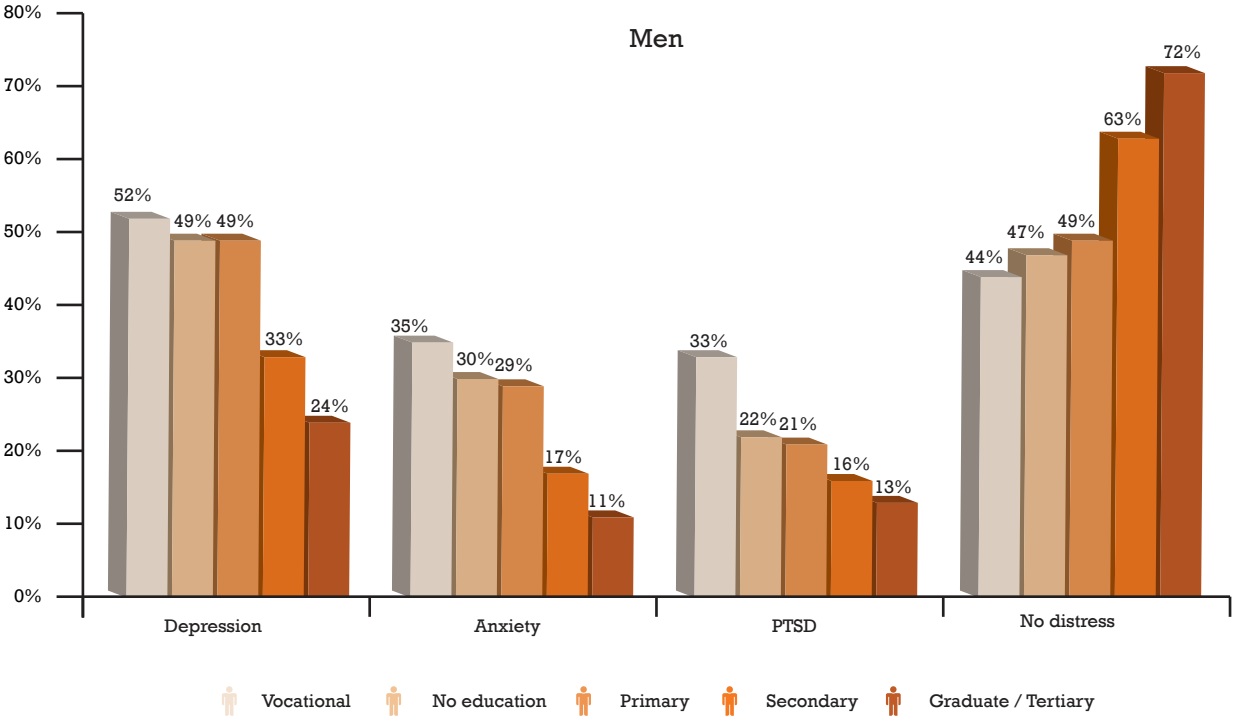



17. Anxiety (X2: 129.9, p<0.01), depression (X2: 142.8, p<0.01), PTSD (X2: 39.5, p<0.001).

18. Anxiety (X2: 295.6, p<0.001), depression (X2: 85.9, p<0.001), PTSD (X2: 74.4, p<0.001).

Figure 3.15: Weighted proportion of adults in the Kashmir Valley with mental distress, by highest education level achieved and sex, KMHS 2015



### Demographic characteristics: Diagnosed severe depression and PTSD

The distribution by sex of those meeting all the diagnostic criteria for depression and PTSD was similar, with 10.1% of men and 10.9% of women meeting the diagnostic criteria for severe depression. Similarly, 6.0% of men and 6.7% of women met the diagnostic criteria for PTSD.

A higher proportion of adults over the age of 55 years met the diagnostic criteria for severe depression and PTSD compared to younger age groups. Similarly, a higher proportion of unemployed people and those reporting home duties as their main activity met the diagnostic criteria for both disorders compared to adults with some form of employment. A higher proportion of Kashmiri adults with poorer educational outcomes met the diagnostic criteria for severe depression and PTSD, compared to those with high school or tertiary education.

## *Exposure to traumatic events*

***Key findings***

- On average, an adult living in the Kashmir Valley has witnessed or experienced 7.7 traumatic events during their lifetime.
- The most common traumatic events experienced were natural disasters (94%), conflict-related trauma (93%), death of a loved one (71%) and a life trauma (76%, includes life-threatening accidents and illness).
- 73% of men and 52% of women had experienced or witnessed more than six traumatic events during their lifetime.
- A dose-response relationship was found between the number of traumatic events experienced or witnessed and the prevalence of mental distress in the population.

A traumatic event is defined in the Diagnostic and Statistics Manual V (DSM-V) as a single/multiple event(s) that "involve actual or threatened death or serious injury, or a threat to the physical integrity of the self or others''. The Life Events Checklist (LEC)[19] was modified to record traumatic events experienced by study participants and administered prior to the HTQ-16. Traumatic events included natural disasters, conflict-related trauma, traumatic life experiences such as accidents and life-threatening illness or injury, sexual trauma and death. In view of the Kashmiri context, conflict-related trauma was categorised into specific traumatic experiences, including crackdowns, interrogation with threats to life, torture, disappearance of friends/family, loss of property/belongings, forced separation from family members and direct exposure to combat during militant or military attacks. Sexual trauma was divided into two categories, 'sexual assault' and 'bad sexual experience'. 'Sexual assault' was defined as rape or attempted rape or being made to perform a sexual act by force or fear of harm. A 'bad sexual experience' was defined as an unwanted or uncomfortable sexual experience. In Figure 3.16 we present the proportion of each type of event personally experienced or directly witnessed by the respondent.

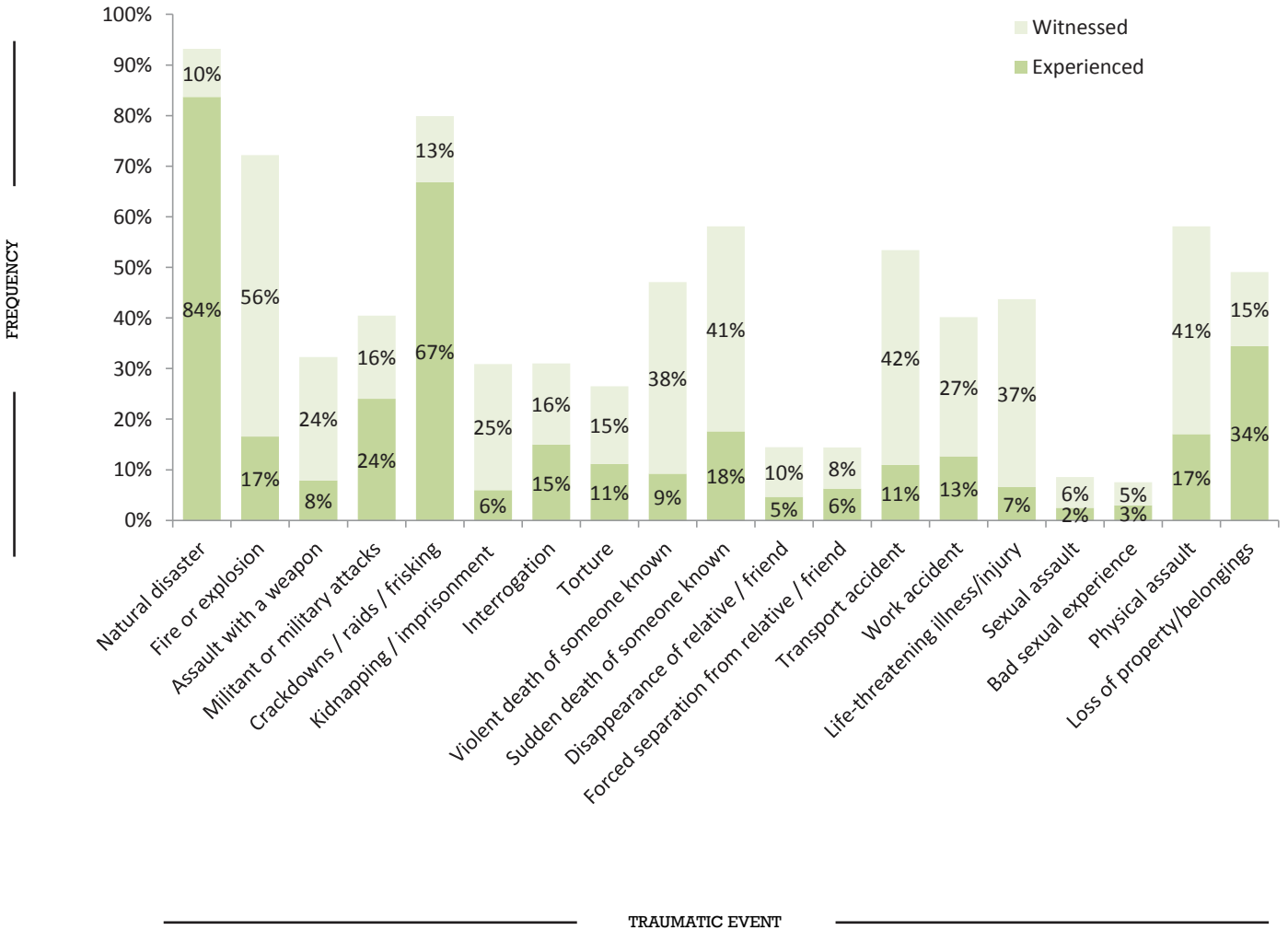
*On average, an adult living in the Kashmir Valley has witnessed or experienced 7.7 traumatic events during their lifetime.*

The majority (99.2%) of the adult population in the Kashmir Valley reported experiencing or witnessing at least one traumatic event during their lifetime. The number ranged from one to 19 traumatic events, with an average of 7.7 (SD: 4.0) per person.

19. The LEC was originally developed alongside the Clinician-Administered PTSD Scale for DSM-IV (CAPS) to be administered prior to CAPS. Designed as a self-administered questionnaire, it demonstrated psychometric properties as a stand-alone assessment of traumatic exposure. The LEC is ranked on a four-point Likert scale with the highest representing self-experience (4), followed by witnessed (3), know someone it happened to but did not witness it (2), does not apply to me or anyone I know (1).

There was a significant difference between the numbers of traumatic events experienced or witnessed by men and women, with men reporting more on average more, except for natural disasters, for which the estimates were the same.[20]

Figure 3.16: Traumatic events experienced or witnessed by respondents over a lifetime, KMHS 2015



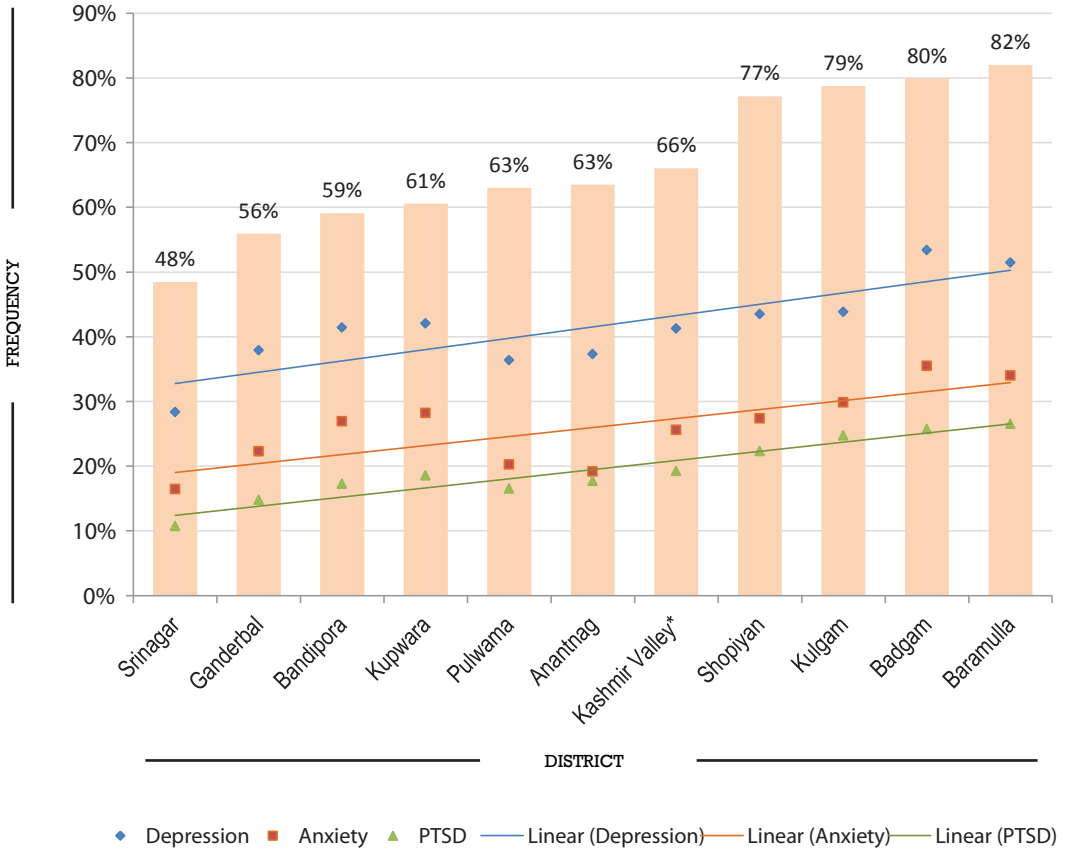

Exposure to traumatic events and the number of traumatic events experienced over a lifetime have both been recognised as having a crucial role in the development of PTSD, major depressive disorder and generalised anxiety disorder. (20, 23-25)

The KMHS 2015 indicates a dose-response relationship between traumatic events experienced or witnessed and the development of symptoms of depression, anxiety and PTSD. There was an upward trend in the proportion of all three disorders in districts reporting greater numbers of traumatic events in the population (Figure 3.17).[21]

20. Table A3 in Appendix 2 provides a detailed summary of the proportion of Kashmiri adults experiencing or witnessing each traumatic event, differences between the sexes and statistical significance. Table A4 in Appendix 2 displays the lifetime number of traumatic events experienced or witnessed, by sex.

21. For a complete list of the weighted proportion of traumatic events per district and SEs refer to Tables A5a and A5b in Appendix 2. Table A6 in Appendix 2 provides a list of the weighted proportion of traumatic events experienced or witnessed by status of mental distress.

Figure 3.17: Weighted proportion of adults experiencing or witnessing more than >5 traumatic events in their lifetime and the prevalence of depression, anxiety and PTSD, by district, KMHS 2015




*Pooled prevalence rates for the Kashmir Valley

## Substance use

***Key findings***

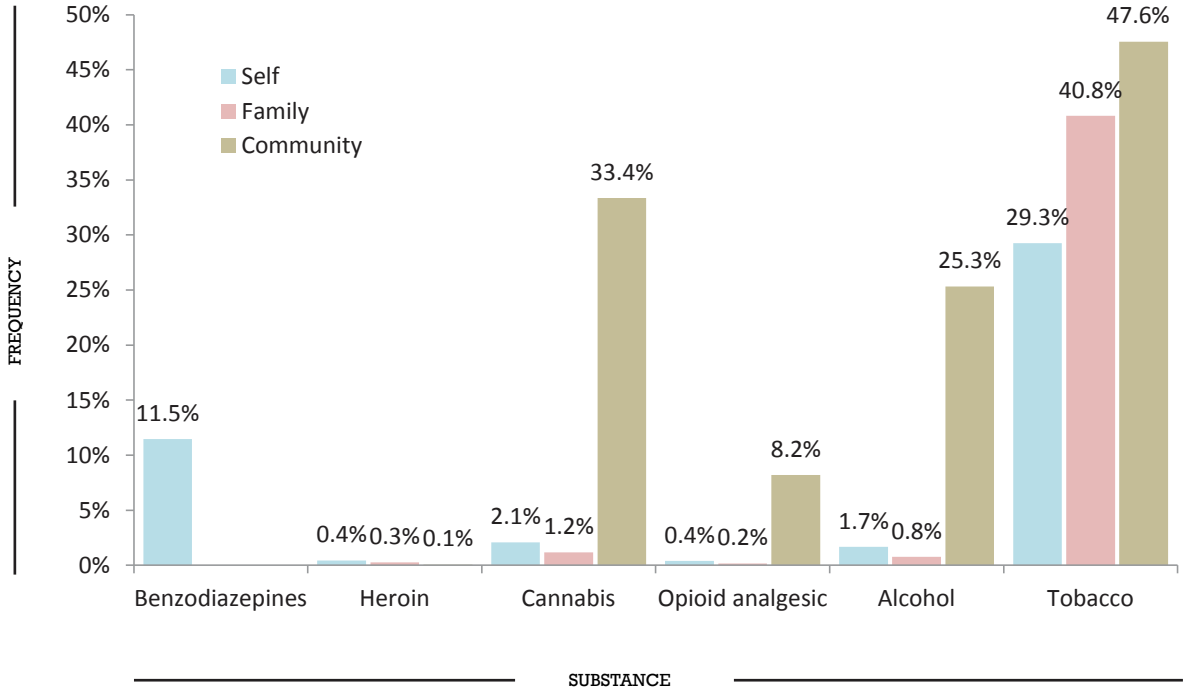
- Over 11% of adults in the Kashmir Valley are taking benzodiazepines.
- 29% of adults use tobacco.

Anecdotal reports from mental health practitioners and the police department in the Kashmir Valley indicate an increase in the use of substances across the area. As such it was important that we attempted to find out information on substance use. Recognizing the major limitationsdifficulty in asking respondents to self-report on substance use which is forbidden in Islam and culturally unaccepted, we decided to include this aspect in the KMHS 2015.

Respondents were asked about self-use, familial use and community use of various substances. Figure 3.18 illustrates the proportion of respondents who reported using brown sugar (heroin), charas (cannabis), Spasmo-proxyvon (an opioid analgesic), alcohol and tobacco. In view of the social and religious taboos in Kashmir around using substances, it is not surprising that low rates of personal and familial use were reported.

Although our data was limited, it did provide us with important information on the extent of benzodiazepine and tobacco use among respondents (both more socially acceptable substances).

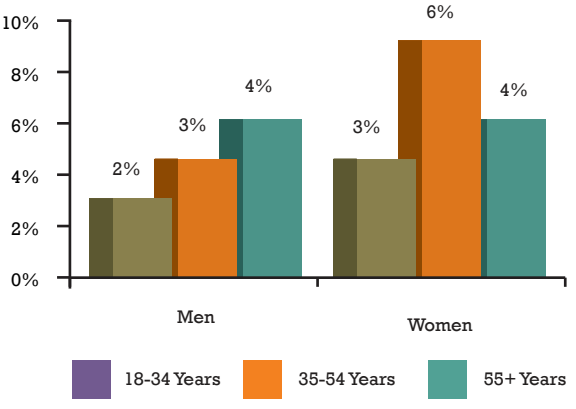
Figure 3.18: Reported substance use at the individual, familial and community level, KMHS 2015




## Benzodiazepines

Respondents were asked about their personal use of benzodiazepines in a separate section, which included questions on who had recommended the medication and the duration of use. Of concern was the high proportion of the population who are currently taking benzodiazepines: at the time of the KMHS 2015, 11% of adults in the valley were taking benzodiazepines, and 46% had been doing so for more than one year. The main source of benzodiazepines was via a doctor's prescription (90%); other sources were peer (spiritual healer), a friend or family member. Data was not collected on pharmacists; however, they may be included in the 'other' source reported by 5% of respondents. A statistically higher proportion of women are taking benzodiazepines compared to men,[22] which is consistent with the higher prevalence of mental distress among women. Benzodiazepine use was distributed across all age groups (Figure 3.19).

Figure 3.19: Weighted self-reported benzodiazepine use by age group and sex, KMHS 2015




22. ($X^2$: 13.74, $p<0.004$).

Of those currently taking benzodiazepines, 82% were also identified as a probable case of depression, anxiety or PTSD, and 26% were classified as meeting the diagnostic criteria for severe depression and/or PTSD.

### Tobacco

Tobacco use was very high, with 29% of Kashmiri adults using some form of tobacco, and nearly half of all Kashmiri households with at least one person in their family using tobacco. Twice as many men as women use tobacco; as reported earlier, tobacco use was identified as one of the main coping strategies for Kashmiri men.

## ADJUSTED RISK FACTOR ANALYSIS

***Key findings***

- Predictive factors for depression are sex, age group, education, and exposure to multiple trauma.
- Predictive factors for anxiety are sex, education, area of residence and exposure to multiple trauma.
- Predictive factors for PTSD are sex, age group, marital status, area of residence and exposure to multiple trauma.

We constructed multivariate logistic regression models to compare characteristics of survey participants who scored above the cut-off for anxiety, depression or PTSD to survey participants who scored below the cut-off in order to identify possible predictive factors for these disorders. The predictive factors for each of the three sets of symptoms were remarkably similar.

*The following characteristics were identified as significant predictive factors for developing symptoms of depression in survey participants (see Table A7 in Appendix 2):*

- Sex (female)
- Age group (over 55 years of age)
- Exposure to multiple trauma (experienced or witnessed >2 traumatic events over a lifetime)

Education was shown to have a protective effect with individuals reporting lower education outcomes (no education or primary) more likely to have mental distress and individuals with secondary or tertiary education shown to have a significant decreased risk of showing signs of mental distress. Being involved in a family business was also shown to be significantly protective against developing symptoms of depression.

*The following characteristics were identified as significant predictive factors for developing symptoms of anxiety in survey participants (see Table A8 in Appendix 2):*

- Sex (female)
- Area of residence (living in a rural area)
- Exposure to multiple trauma (experienced or witnessed >2 traumatic events over a lifetime)

As with symptoms of depression, education was shown to have a protective effect for anxiety symptoms with individuals reporting lower education outcomes (no education or primary) more likely to have mental distress and individuals with secondary or tertiary education shown to have a significant decreased risk of showing signs of mental distress.

*The following characteristics were identified as significant predictive factors for developing symptoms of PTSD in survey participants (see Table A9 in Appendix 2):*

- Sex (female)
- Age (over 55 years of age)
- Marital status (widowed, separated or divorced)
- Area of residence (living in a rural area)
- Exposure to multiple trauma (experienced or witnessed >2 traumatic events over a lifetime)

## CHAPTER 4: PRELIMINARY FINDINGS FROM FOCUS GROUP DISCUSSIONS

In this chapter we report preliminary findings from FGDs related to mental illness treatment-seeking behaviours, access to care and perceived service needs.

## DISCUSSING MENTAL HEALTH SERVICES

Interim analysis from FGDs is presented in this section to provide preliminary insights into community knowledge and perceptions of mental health services and access to care. Due to time constraints, at the time of writing this report not all of the 20 FGDs had been coded. We present here exploratory and descriptive results occurring commonly in the six FGDs that have been coded. Preliminary coding is suggestive of some common themes that can help inform decision makers when implementing the recommendations laid out at the beginning of this report. Results of the in-depth qualitative analysis of all 20 FGDs and additional key informant interviews will be presented elsewhere.[23] More themes are likely to be identified at this time.

In Kashmir, the language of distress is largely somatic. Whereas cognitive symptoms may not be considered worthy of attention, somatic symptoms are viewed as legitimate. Individuals with mental distress will most often present with somatic symptoms, and this means that frequently a considerable time elapses between the first presentation and meeting a mental health professional. (26) However, FGDs show that Kashmiris do recognise social, cognitive and behavioural presentations of mental distress/illness, as highlighted in Table 4.1.

Table 4.1 Preliminary codes and suggested themes from focus group discussions on local knowledge and perceptions of symptoms of mental illness

| Codes | Axial Code | Sub Theme | Theme |
|---|---|---|---|
| Sadness is reflected on his/her face | Facial expressions | Physical characteristics | Presentation of mental illness |
| Tension is reflected on the face | | | |
| Speaks less | Non communicative | | |
| Remains silent and sits in one place | | | |
| Not reactive when we speak to them | | | |
| Withdrawn | Social withdrawal | Social presentation | |
| Isolate themselves from others | | | |
| Not his/her usual self | Change in social interaction | | |
| Unable to express what they want to say | Poor expression | | |
| Talks inappropriately / provides irrelevant answers | | | |
| Not present in his/her own mind | Dissociation | | |
| Inability to focus | | | |
| Becomes forgetful | Poor Concentration | Cognitive presentation | |
| Worries too much about things | Worry | | |
| Thinks excessively about anything | Excessive thinking | | |
| Becomes angry / aggressive | Anger | | |
| Resorts to drugs, smoking, alcohol and cannabis | Substance use | Behavioral presentation | |

The community's knowledge of services available for the treatment and management of mental illness is largely limited to a biomedical understanding of doctors and medicine. This biomedical understanding is combined with traditional approaches, such as seeking the guidance of a *peer* (spiritual healer). Table 4.2 summarises the themes related to the knowledge and perceptions of mental health services.

23. Shabnum Ara, a co-author on this report, will present the results of an in-depth analysis of focus group discussions and key informant interviews in her thesis and subsequent *peer*- reviewed publications.

Table 4.2 Preliminary codes and suggested themes from FGDs on local knowledge and perceptions of services for mental illness

| Codes | Subthemes | Themes |
|---|---|---|
| Take them to a *peer* [spiritual healer] | Socio-cultural practices | Treatment seeking behavior |
| Take them to *Hakeem* [traditional healer] | | |
| Take them to a shrine | | |
| Take them to 'that' doctor for mind/brain | | |
| Take them to 'a' [non-specified] doctor | | |
| Take them to hospital | | |
| When family is fed up they will take them to mental hospital | Biomedical practices | |
| If severe take them to mental hospital | | |
| Get medicine from compounder [dispensary] | | |
| First they are taken to *peer* then after they are taken to a doctor | Combination of socio-cultural and biomedical practices | |
| Took medicine and then to *peer*, mostly treated by *peer* | | |
| Adhere to both treatments [from spiritual healer and doctor] | | |
| Prayer and medicine *'Dua Ti Dawa Ti'* | Rituals | |
| From the *peer* we get amulets, need to perform *'niyaaz', 'taweez'* | | |
| Doctor gives medicine | Medicine | Treatment received |
| They will take medicine for some time and then stop | | |
| Doctor prescribes medicine and tries to find out how the mind is | Hospitalisation | |
| Left in mental hospital to get different type of treatment | Multiple investigations | |
| They are prescribed medicine and asked to do tests | Medicine effective | |
| Doctor prescribes medicine and it helps, person improves | Combined treatment | |
| Both medicine and *'taweez'* have an effect | | |
| Treatment will be by almighty himself | Fate | Perceptions of treatment received |
| If it is in his fate he will get better | | |
| We have taken her to every doctor and she is not getting better | | |
| Medicine will ruin them | Medicine not effective | |
| Not able to tolerate the medicine | | |
| People who are poor leave them (ill person), cannot afford to take them for treatment | Financial constraints | Barriers to seeking Treatment |
| No transport and no money for transport | | |
| Those that have money can take them to a doctor | | |
| Private clinic expensive, we miss our appointment we pay more | | |
| If a person does not have money what will he do | | |
| We don't have roads | Lack of physical infrastructure | |
| To find a doctor we need transport | | |
| *Peer* is nearby | Distance to service | |
| There is no service here | | |
| Extreme weather reduce access | Environmental factors | |
| Climatic conditions reduces access during winter | | |
| Mostly take them to *peer* because we don't have a medical doctor | | |
| What facility is there? We don't have anything here | No access to services | |
| There is no such hospital here, no such doctor [for mental health] | | |
| No service for people with tension to get first aid | Lack of will | |
| They [the ill person] do not want to go to the doctor | | |
| We have no knowledge of services | Lack of awareness | Knowledge of Services |
| We can say go to a good doctor but we don't know to whom | | |
| We do not know this term, 'counselling' | | |
| We don't have any guidance on this, we only take them to doctor | | |
| Only aware of doctor and '*peer*' (spiritual healer) | Biomedical understanding | |
| Mental hospital | | |
| 'Tensionee' doctors [who take care of tension] | | |
| We have heard there is *Dimag ka* [brain/mind] doctor in Srinagar | Specialist services | |

## TREATMENT-SEEKING BEHAVIOURS

FGDs revealed that there was a common model of treatment-seeking behaviour among Kashmiris. Participants reported taking the affected individual to a *peer* (spiritual healer), or less commonly a *hakeem* (traditional healer). The *peer* uses amulets, verses from the Koran, and instructs the individual to perform *niyaaz or taweez* (ritual acts that will cure them). If treatment is unsuccessful with the *peer* the family may seek out another *peer* or go to a hospital to see a doctor. Respondents reported that doctors give medicine and that they adhere to the treatment of both the doctor and the *peer*. While many reported visiting the peer first and then the doctor, the reverse was also true; when their symptoms were not relieved after visiting the doctor they would go to the *peer*.

*Pehlay peer kay pass laejatay hain aksar peer kay pass laejatay hain uskae baad doctor kay pass laejatay hain.*

*First they are taken to a spiritual healer/peer, often taken to a peer and after that they are taken to the doctor.*

***27-year-old woman from Baramulla***

*Aksar yahan peer kay pass laejatae hain dimag ka doctor hai he nahin laejaengay kahan.*

*Here they are often taken to a peer/spiritual healer [because] the doctor for brain [mind] is not [available] here. Where to take [them]?*

***27-year-old woman from Baramulla***

## AWARENESS OF SERVICES

While the majority of participants referred to the *peer* and the doctor when asked about the services that were available for people with mental illness, in all focus groups someone referred to the 'mental hospital' or *'pagal khana'*. Little was known about other mental health services on offer.

Some individuals mentioned 'tensionee' doctors, the English word tension being commonly used in Kashmir to describe all forms of stress and mental distress.

*Tche na dapaan kah Doctor tchu tueth ti, tensioni, yus tensionas wataan chu, su chu dawah wavah dewaan, ghacaan tche faraq, wini chu tension chu asaan su chu oeruk yoeruk wanaan, temis tche wanan yi nimwon Doctoras Kam se kum gacaes faraq, aa ghachan chi faraq.*

*We say that there is a kind of 'tensionee' doctor who takes care of tension, he prescribes medicine and the person improves. When a person is in tension he can talk nonsense, then we tell them to take him to a doctor; at least he gets better.*

***45-year-old woman from Srinagar***

Even though the 'mental hospital' was mentioned in all focus groups, it was largely a place people had just heard about rather than considered as an accessible service. It was often referred to as a last resort: when all other treatments and efforts had been exhausted the person would need to go to the 'mental hospital'.

*humaray yahan humsayae me ek ladki hai vo pagal hai bilkul ab vo ghar me bohat tang aagayay karaengay kya vo tayari kar rahay hai ab us ladki pagal ko vahan (pagal khana) le kar jaengay. ab humae itna is area me maloom nahin hai pagal khana kahan hai.*

*In our neighborhood there is a lady who is completely mad/insane and her family is fed up, what to do, and they are preparing to take her to the mental hospital/asylum. In this area we don't even know where [the] mental hospital is.*

***27-year-old woman from Anantnag***

Few participants had knowledge of specialist mental health service providers, beyond the 'mental hospital'. Those who had said that this service was not readily available to them or their community.

*Jab tak dimag k zaheni dabaav valay ko psychologist na padhay tou tab tak meray khayal me ye maslaa hull nahin hosakta hai tou psychologist he is mamlay ke diagnose kar sakta hai iska hull kya hai tou vo cheezay humay dehatu me mill nahin paa rahe hai tou yehi kaaran hai ke din se din humare jo hai aesay loag hai unki hadh badh rahe hai.*

*Unless the psychologist [understand] the person with mental health problems, according to me the problem will not be solved. Only a psychologist can diagnose and find a remedy to such issues but we don't get psychologists in villages and that is the reason why with every day the number of such people [people with mental health issues] increases in number.*

***60-year-old man from Anantnag***

## BARRIERS TO ACCESSING SERVICES

Respondents identified a number of barriers to accessing care, including inadequate infrastructure such as poor roads and transport, the cost of travelling long distances to obtain specialised care and extreme weather conditions.

*Jo loag gareeb hongay jis k pass koi guzaara nahin hoga vo aesay he chod daetay sonchtae he ye apnea haal pae shayad mast hai tou rehnay dou hogaya theek tou khudi hojaega nahin hogaya tou dekhaengay vo nahin karate iska koi ilaj aesay b bohat loag hai.*

*People who are poor and cannot afford [treatment], leave such persons [persons with mental health problems] on their own, thinking that they will get better by themselves, or else we see, many people don't even seek treatment [for such persons].*

***18-year-old woman from Baramulla***

*Mental hospital hai lekin mental hospital pura throughout state me dou (2) he hai ya tou jammu me hai ya Srinagar me hai tou vahan pae ghareeb logun ka sources he nahi hai pohanchnae kay.*

*There is the mental hospital but there [are] only two mental hospitals in the whole state. One is in Jammu and the other is in Srinagar. To reach this place is not affordable.*

***60-year-old man from Anantnag***

Table 4.3: Preliminary codes and suggested themes from FGDs on local knowledge and perceptions of community mental health service needs

| Codes | Subthemes | Themes |
|---|---|---|
| Need a good hospital nearby | | |
| Need a doctor and facility for everything | | |
| Whatever facility is needed for this – that should be here | | |
| It [mental health services] should be in every district | Proximity of services | |
| We should have some kind of clinic here for this [mental illness] | | |
| Need a dispensary nearby | | |
| There could be some programme then people could understand | | |
| We should have a facility to show us how to do some kind of first aid [for mental illness] | Awareness programme | Health services needs |
| Medicine | | |
| Doctor for this [mental illness] | | |
| Staff that understand others *museebath* [troubles] | | |
| Staff who can understand and motivate such people [mentally ill] | Service providers | |
| *'dibari karn'*- people who can talk in such a way that they come out of this | | |
| Psychologists | | |
| We should have a road | | Infrastructure needs |
| There should be employment here | Physical infrastructure | |
| Some way to earn a livelihood | | Economic service needs |
| Some kind of employment for women | Employment | |
| Some business needs to be started here | | |
| Centre for learning some kind of work and keep busy | Business development | Skill development needs |

## Identified service needs

Participants identified a number of services as necessary for the management of mental health in their communities. The most commonly cited needs included: employment, roads, transport, hospitals and doctors. Although many did not know the terms for mental health professionals, they described the service need in terms of desired function.

Despite being unaware of mental health service availability in the valley, beyond the psychiatric hospital in Srinagar, many participants recognised the potential benefit of having access to a service that understood the needs of individuals suffering from mental illness.

*Tueth staff goec aasun yeim taemis motivate karnas teim nei yee taemsund ye takleef samaj saen kin tchu ye akh pagla akh magar huemis tchu pata.*

*It would be highly desirable to have someone [staff] who can motivate them and understand their problems. For us they are simply mad, but for the staff their condition is obvious.*

***44-year-old man from Anantnag***

*humdard honae chahae aesa staff hona chahae jo dusrae ke museebath ko samaj sakay.*

*[There] should [be] sympathisers, staff who can understand others' misery [problem].*

***27-year-old woman from Anantnag***

The financial limitations regarding accessing care and the need for decentralised service delivery were discussed in all focus groups.

*Akh bachenas ropyee dah [10] kirayee soen matlab chu aath yoes te service aasi soe gacii yataen aasin, clinic, Hospital, Aati gacii aasun doctor taemi kismuk yues aemis vuchee aate gacan teim medicine aasin yeim aemis lagan.*

*They will save the money that they had to spend on travel. We feel that whatever services are necessary should be here; hospital, clinic and a specific doctor who can provide service and availability of those medicines that are required for these patients.*

***48-year-old woman from Anantnag***

The need for awareness raising at community level was highlighted.

*Koi program hota har dusray teesray din yahan logun ko samjaate, Agar koi clinic he hota vo har ek ko maheenay me ek din kisi din jamah kar kae kuch baat samjatae.*

*There should be some programme every second or third day to make people aware. If there was a clinic here then it would gather and raise awareness among people.*

***27-year-old woman from Anantnag***

A predominant theme throughout all FGDs was the biomedical understanding of the management of mental illness. Medicine was repeatedly mentioned by participants in response to questions on the management of mental illness and in terms of service needs. However, all groups also identified a need for access to individuals with an understanding of mental illness and how to treat and manage it. Participants did not recognise the term 'counsellor'; they had either not heard of it or had heard it but had no understanding of a counsellor's role in mental healthcare.

## CHAPTER 5: LOOKING FORWARD

In this chapter we discuss the significance of the findings from the KMHS 2015, linking findings with empirical evidence.

## DISCUSSION

Globally, mental health disorders make up a large proportion of disease burden and are the leading cause of years lived with disability (28%). (27) In 2012, the World Health Assembly called for a comprehensive, coordinated response from health and social sectors to address mental health issues at country level. (28) In order to target services and inform policy decisions, the epidemiology of mental distress in the population must be understood. The recognition that conflict-affected populations are at higher risk of poor mental health outcomes, has led to an increase in the number of epidemiological studies being conducted in such settings. (3, 25, 29-31) Although many smaller studies have been conducted on mental health issues in the Kashmir Valley, (12, 13, 16, 32-40) to date there has not been a large-scale prevalence study to assess the burden of mental distress across the valley's 10 districts.

The KMHS 2015 was conducted in all 10 districts of the Kashmir Valley using a mixed-methods approach comprising an electronic survey questionnaire administered to 5515 individuals (of which 5428 were analysed) and 20 FGDs involving both men and women. The survey used internationally recognised tools for measuring depression, anxiety and PTSD, the HSCL-25 and HTQ-16. In preparation for the survey, both tools went through a process of cultural adaptation and translation, with the HSCL-25 being validated for the Kashmiri population. The KMHS 2015 also estimated the exposure to traumatic experiences in the population, measuring the correlation with manifested mental distress. The survey provides valuable information on prevalence of mental distress in Kashmiri adults, as well as a record of community perceptions and knowledge of mental health and access to services in the Kashmir Valley.

***The main strengths of this study are:***

- The survey was conducted in all 10 districts of the Kashmir Valley.
- The HSCL-25 and HTQ-16 were culturally adapted and translated for use in the Kashmiri context.
- The HSCL-25 was culturally validated for Kashmir.
- The use of probabililistic sampling resulting in representative data that could be extrapolated to obtain population estimates.
- Robust methodology facilitated the collection of high-quality data, enabling comparison with other similar contexts.
- Data collection was completed over a three-month period. Only one village was not accessible due to poor weather conditions.
- The survey benefited from the cooperation of the people living in the Kashmir Valley, resulting in a high response rate of 97.7%.
- Using a mixed-method approach with the qualitative arm of the study providing a greater understanding of community health-seeking practices, knowledge of services and access to care.

***The main limitations of this study are:***

- The survey was restricted to only three mental health disorders.
- The survey only collected data on adults; adolescents and children were not included.
- We did not collect data on ethnicity.
- Due to the length of the survey questionnaire, a screening tool for general health was not included; this data was collected on the basis of one question only.
- The HTQ-16, although culturally adapted and translated, was not validated for the Kashmiri population.

## MENTAL DISTRESS IN THE KASHMIR VALLEY

Findings from this study showed a very high prevalence of mental distress in adults living in the Kashmir Valley, with approximately 1.8 million people affected (45% of adults).

The prevalence of depressive symptoms in the adult population of the valley was high, with 41%, approximately 1.6 million people, scoring above the validated cut-off on the HSCL-25. Of these, 10% met all the DSM-IV diagnostic criteria for severe depression, representing over 400,000 adults. Over half of survey respondents reported feeling low in energy and worrying too much in the four weeks prior to the survey. A large proportion also indicated that in the previous four weeks they had experienced difficulty sleeping, a loss of interest in things, feelings of sadness, worthlessness and crying easily for no identified reason.

A strong indicator of mental distress in this population was the high proportion (12%) who reported having had thoughts of ending their own life in the previous four weeks. Further analysis indicated that 65% of those identified as a probable case for any mental disorder had experienced suicidal ideation in the previous four weeks.

The prevalence of probable anxiety disorders among adults in the Kashmir Valley was estimated at 26%, using the Kashmiri validated cut-off score for the HSCL-25 anxiety items, indicating that approximately 1 million adults living in the valley are suffering from symptoms of an anxiety disorder. Nearly two-thirds of

respondents reported having experienced headaches in the past four weeks, and a high proportion also indicated feelings of nervousness, tension and experiencing heart palpitations. The high reporting of physical symptoms in this survey is reflective of the more common somatic manifestation of mental distress in the Kashmiri population. Whereas cognitive symptoms may not be considered worthy of attention, somatic symptoms are viewed as legitimate. Individuals with mental distress will most often present in the Kashmiri context with somatic symptoms. This means that frequently a considerable time elapses between the first presentation and meeting a mental health professional, resulting in substantial cost to families as they pay for multiple investigations. However, it is important to highlight that FGDs showed that Kashmiris do recognise cognitive, behavioural and social symptoms in terms of mental distress.

The prevalence of PTSD, characterised by symptoms of re-experiencing, avoidance and arousal, was high, with 19% of adults scoring above the international cut-off for PTSD on the HTQ-16, representing 771,000 individuals. Nearly a quarter of a million adults (6%) met all the DSM-IV diagnostic criteria for severe PTSD. The main symptoms reported were feeling irritable and having outbursts of anger in the previous four weeks. A high proportion also reported difficulty concentrating, recent thoughts of terrifying or hurtful events, recurrent nightmares, and avoidance of thoughts and activities that reminded them of a traumatic event.

In estimating the prevalence of PTSD in South Sudan, Ayazi et al. (2014) applied the diagnostic algorithm for PTSD, developed by the Harvard Trauma Group. (18) When we applied this algorithm our estimates of PTSD reduced from 19% to 6%. According to the literature, PTSD symptoms that do not meet full PTSD criteria are common and often clinically significant. Individuals meeting some but not all PTSD criteria are often characterised as having subthreshold PTSD (41) and require an intervention. The 13% of Kashmiri adults categorised as having PTSD from the cut-off score and not meeting all the diagnostic criteria for the algorithm may be in this subthreshold. Further research incorporating clinical psychiatric diagnostic assessment is required to verify this.

Our findings are consistent with those reported in population surveys in other settings. Yasan et al. (2008) reported a prevalence rate of 15% for current PTSD in a population affected by protracted conflict in Turkey. (29) In southern Sudan, Roberts et al. (2009) reported the prevalence rates for PTSD and depression as 36% and 50%, respectively. (42) A more recent study conducted by Ayazi (2014) estimated the prevalence rate for PTSD at 26% in the southern Sudanese population. (43) In Afghanistan, 68% of the population were found to have symptoms of depression, 72% symptoms of anxiety and 42% symptoms of PTSD. (44)

### *Co-morbidity*

High rates of co-morbidity of mental health disorders are recognised in the literature, with depression, anxiety disorders other than PTSD and substance use disorders occurring commonly in people diagnosed with PTSD. (20-22) We found high rates of co-morbidity in the Kashmiri adult population, with nearly 90% of individuals identified as a probable case for PTSD and 88% of those identified as having a probable anxiety disorder, also screening positive for depression. In the survey, 16% of the respondents scored above the cut-off in all three screening tools.

### The demographics of mental distress

Higher rates of mental distress were reported in women than in men for all three mental health disorders. This finding is commonly reported in the literature. (20, 45, 46) Consultation with mental health practitioners revealed the following possible explanations specific to the Kashmiri population: alexithymia[24] is higher in men and can lead to under-reporting on questions associated with quantifying emotional responses. Also, culturally, men are considered weak if they show emotion, and men in Kashmir have more opportunity to move around outside of the home, whereas women are largely confined to domestic chores and responsibilities. Interestingly, when the diagnostic algorithms were used to identify people with severe depression and PTSD (those who met the DSM-IV diagnostic criteria), the prevalence was similar for men and women.

Other predictive factors for having signs of mental distress in the Kashmiri adult population were being older, unemployed or retired, being widowed, divorced or separated, having poor education outcomes, living in a rural area, and having experienced more than two traumatic events over a lifetime. The association between mental distress and age, poor education and being divorced, widowed or separated has also been found in studies conducted in other contexts such as Yugoslavia, (47) Iraq, (25) Afghanistan (31, 48) and Turkey. (29)

### *Trauma*

Only 0.3% of Kashmiri adults have not experienced a traumatic event during their lifetime. On average, an adult living in the Kashmir Valley has witnessed or experienced 7.7 traumatic events during their lifetime. The most frequently reported traumatic

24 Difficulty in experiencing, expressing and describing emotional responses.

events include natural disasters and conflict-related crackdowns, raids and frisking. A high proportion of Kashmiri adults have experienced the loss of property or belongings due to a natural disaster or conflict, have witnessed or experienced the violent and/or sudden death of someone known to them, a fire or explosion, military or militant attacks, and physical assault. A high proportion have witnessed transport and/or work accidents and the life-threatening illness or injury of someone known to them. Sexual assault (rape) has been experienced by 2% of Kashmiri adults, and witnessed by 6%. These figures include both sexes. Due to sensitivities associated with reporting sexual assault for both men and women, it is likely that the real figure is higher.

We identified a dose-response relationship between traumatic events and development of symptoms of mental distress in the Kashmiri adult population. Predictive factors for the development of symptoms of depression, anxiety and/or PTSD included the number of reported traumatic events experienced or witnessed during a lifetime. An upward trend was noted in prevalence rates for all three disorders in districts reporting a higher number of traumatic events in the population. A dose-response relationship between the number of traumatic events experienced and the development of PTSD is reported in the literature. (41) The psychological impact of trauma on an individual can result in delayed manifestation of symptoms, which can take years to present, and is exacerbated by further exposure to trauma. A study conducted in Yugoslavia concluded that people with untreated conflict-related PTSD have a high risk of still having PTSD more than 10 years after the traumatic event. (47) The high prevalence of probable PTSD (19%) in the Kashmiri population may reflect the impact of cumulative exposure to traumatic events, delayed manifestation of symptoms, a longstanding disorder that has not been treated or a combination of factors.

Although men report higher numbers of traumatic events than women, the likelihood of developing PTSD symptoms was found to be higher in women. This difference between the sexes has been recognised in other studies and cultures. (25, 43) The increased vulnerability of women to PTSD is not well understood and requires further research. (20)

**Extending understanding beyond trauma**

Prior research conducted in the context of protracted conflict has focused on the impact of conflict-related trauma on the mental wellbeing of the affected population. However, research is now moving away from a specific conflict-related trauma-focused understanding of mental health in such settings towards a more balanced approach recognising the broader socio-economic impact conflict has on a population and on mental health outcomes. (48, 49) For the past 27 years, the ongoing political situation in Kashmir has restricted the development of private industry and curtailed a once flourishing tourist industry, which served as an important source of income for many households in the valley. (26) Survey respondents identified common daily stressors including financial issues, poor health, unemployment, family problems, stress or 'tension' as the main problems they face in life. Focus group participants also acknowledged multiple daily stressors as the perceived cause for mental illness; in addition to those cited by survey respondents, they mentioned 'halat' (literately meaning 'the situation', a term commonly used in Kashmir to describe the political instability), death in the family, interpersonal relationships, poverty, substance use and spiritual causes as having an impact on mental health.

Conflict destroys social and economic structures in communities, leading to a breakdown of the social and material fabric. Poverty, unemployment, underemployment and loss of social support networks all have a negative effect on mental health. The impact of daily stressors on mental distress in conflict-affected populations should not be underestimated. (48, 49)

### *Substance use*

The KMHS 2015 showed that nearly 30% of Kashmiri adults use tobacco in its various forms, and nearly half of all Kashmiri households state that at least one person in their family uses it. Using tobacco was reported as one of the main coping strategies for men. The widespread use of tobacco in all its forms was reported in 2008 by Margoob. (38) While not a specific objective of this study, this finding highlights a public health concern in Kashmir that could have a long-term impact on the population's health, and deserves the attention of public health stakeholders.

Very few Kashmiris reported consuming alcohol, taking cannabis or opioids. This is not reflective of findings from prior research conducted in the valley or of anecdotal evidence from service providers. (34, 50-52) It is therefore likely that our results on illicit substance use are biased due to under-reporting. The social unacceptability of using these substances in Kashmir is likely to have influenced participants' responses. Kashmiris felt more comfortable disclosing community use of alcohol, cannabis or opioids, and although these data is presented in this report, caution must be adopted in the interpretation of these data prior to making any generalisations. Further research on substance use in Kashmir is required in order to understand and estimate the extent of the problem.

### *Challenges in providing mental health care – what people want*

The gap between treatment need and provision in Kashmir is multifaceted and complex. It is not just a question of physical access; other challenges include a shortage of Kashmiri psychiatrists and psychologists, limited counselling services at district level, and a largely centralised model of care that requires people to travel to Srinagar, find accommodation and make the journey back home; a journey further complicated at certain times of the year by extreme weather that completely cuts access to some areas. The treatment gap in Kashmir is further complicated by the incomprehensibility of the western 'counselling' or 'talk therapy' model of care to the majority of the Kashmiri population. Our FGDs revealed that the people of Kashmir have no concept of 'counselling'; their perceptions of the treatment and management of mental illness are through the lens of biomedicine or traditional medicine.

Varma (2012) conducted extensive ethnographic research on perceptions of psychosocial programmes in the Kashmir Valley. Varma describes Kashmiris as demanding a biomedical response to mental illness, stating that interventions had to be medicalised in order for them to be perceived as having legitimacy. (26) This was reflected in our focus groups, with participants referring to medicine repeatedly when asked about treatment-seeking behaviours, treatment received and mental health service needs. Addressing this will be one of the greatest challenges if there is to be a move away from the biomedical model and the provision of an effective decentralised model of care for mental health in the valley. Bio-medicalisation of mental healthcare and treatment is reflected in the KMHS 2015, which showed that 11% of adults in Kashmir have been taking benzodiazepines, many for over one year. How to disentangle the psychosocial and medical models of care and offer culturally appropriate, effective and acceptable interventions is a question for all mental health service providers in the Kashmir Valley.

Exploration of treatment-seeking behaviours during FGDs revealed the importance of the *peer* (spiritual healer) for Kashmiris. The *peer* was frequently mentioned as the first point of care and only when that was unsuccessful did many Kashmiris decide to seek a doctor. Miller and Rasmussen advocate the use of traditional healers in community-based mental healthcare, recognising that their explanatory models and methods of treatment are often more familiar and acceptable to the community. (49) When planning and implementing mental health services in Kashmiri communities, the engagement of *peers* could help to strengthen the impact of interventions.

### *A multidisciplinary approach to mental health prevention and care*

In order for mental health services to reach all those in need, a renewed commitment by mental healthcare providers in the valley is required to collectively build capacity and offer a multidisciplinary model of care that recognises the strengths of each level of service delivery. It is only when such a model is implemented successfully that people experiencing mental distress will have access to early intervention and management and the hope of an improvement in quality of life and overall community productivity.

*Meray khayal mae batanae ko kuch b nahin raha aur sunnae ko b kuch nahin raha aur jo baradar likh rahay hai isnae likhnay me b koi kami nahin chodi ab itna he hai ke agar kahin na kahin amal hojayae aap ke badawlat.*

*In my opinion, there is nothing left to speak about and nothing more to listen to and the brother who is writing [taking notes] left nothing unwritten. Now, we expect if somewhere/somehow this [can] be practically applied because of you.*

***44-year-old man from Anantnag***

## APPENDICIES

The appendices provide supplementary information including:

- A detailed overview of the study methodology
- Tables showing results from statistical analysis
- A breakdown of key findings by district

## APPENDIX 1: EXPLANATORY NOTES ON METHODOLOGY

This appendix describes the study methodology in greater detail, with information about the screening tools, their validation, the questionnaire, recruitment and training of the data collection team, data management and statistical analysis .

### The screening tools, HSCL-25 and HTQ-16

Screening for mental disorders can be carried out in various ways. When using a continuum scale, by which a patient rates the severity of their symptoms from none to severe, the identification of an appropriate threshold or cut-off is paramount. This cut-off determines the ability of the tool to correctly identify whether a person is classified as a 'probable case', in need of further assessment or not. Cut-offs have been found to vary across cultures (53-55) and it is recommended that they are adapted, translated and validated prior to use in a specific population. (18, 56, 57) Following these recommendations, we conducted a separate research project prior to this survey with the objective of culturally adapting, translating and validating the HSCL-25 and HTQ-16 for use in Kashmir. Boxes A1 and A2 provide more information about these tools.

Box A1: Screening tool for depression and anxiety

The Hopkins Symptoms Checklist (HSCL-25) was originally designed by Parloff, Kelman and Frank at Johns Hopkins University in the 1950s. [50]

The HSCL-25 was created specifically for detecting anxiety and depression in the primary care setting. It is composed of 25 items, with 10 assessing symptoms of anxiety and the remainder assessing symptoms of depression in the four preceding weeks. Rating is via a four-point Likert scale with the following response categories: 'never or no', 'sometimes', 'often', 'always'.

Three scores are calculated from the responses; the depression score is the average of the 15 depression items and the anxiety score is the average of the 10 anxiety items. The total score is the average of all 25 items and has been shown in several populations to be highly correlated with severe emotional distress of unspecified diagnosis and the depression score is correlated with major depression as defined by the DSM-IV. The anxiety items are consistent with the DSM-IV diagnosis of generalised anxiety disorder; however, symptoms may also be consistent with other anxiety disorders.
The 25-item checklist was culturally adapted, translated and validated in a separated research project completed in April 2015. The Kashmir validated cut-off scores of 1.57 for depression items and 1.75 for anxiety items were used in the analysis presented in this report.

Box A2: Screening tool for PTSD

The Harvard Trauma Questionnaire (HTQ-16), developed by Mollica et al., [51] measures exposure to specific traumatic events in addition to emotional symptoms with a recognised association to trauma. The HTQ-16 consists of four parts; Part 1 asks about specific traumatic events, Part 2 is an open-ended description of the most traumatic events, Part 3 looks specifically at head injury and Part 4 includes 30 trauma symptoms. [52] The first 16 items of Part 4 were derived from the DSM-IV criteria for PTSD. This 16-point checklist is often used in isolation as a screening instrument for symptoms of PTSD. The checklist consists of 16 items rated on a four-point Likert scale, similar to the HSCL-25. The response categories include: 'never or no', 'sometimes', 'often', 'always'.

The overall DSM-IV PTSD score is reached by calculating the average of the individual scores, with a higher score suggesting an increased probability of PTSD. [53] The 16-item checklist in Part 4 was culturally adapted and translated in a separated research project completed in April 2015.
The recommended international cut-off score of 2.0 (1) was used in the analysis presented in this report.

## Validation of the HSCL-25 and HTQ-16

The HSCL-25 and HTQ-16 were culturally adapted and translated by an expert team of psychiatrists (IMHANS) and clinical psychologists (MSF), in collaboration with the Department of Psychology at the University of Kashmir. The cultural adaptation and translation into Kashmiri of the HSCL-25 and the HTQ-16 followed van Ommeren's principle of using multiple forms of equivalence . The HSCL-25 and HTQ-16 administered by four Kashmiri clinical psychologists were compared against a 'gold standard' structured psychiatric interview, the Mini International Neuropsychiatric Interview (MINI) conducted by four Kashmir psychiatrists. Validating interviews were administered to 290 respondents' recruited using consecutive sampling from general medical out patients departments in 5 districts of the Kashmir Valley between February and April 2015. Results showed internal reliability of the HSCL-25 was high ($\alpha$=0.92 and ICC=0.75), with an estimated optimal cut-off point of 1.50, lower than the conventional cut-off of 1.75. Separation of the instruments into sub-scales demonstrated a difference in estimated cut-offs for Anxiety items and Depression items, 1.75 and 1.57, respectively. Too few respondents met the DSM-IV criteria for posttraumatic stress disorder (PTSD) as determined by the psychiatrists administered MINI and therefore this instrument was unable to be validated despite the fact that high internal reliability was demonstrated ($\alpha$=0.90).

Kashmir-specific cut-off points for depression and anxiety were used in this survey; however, due the limited sample size, it was not possible to determine a cut-off for the HTQ-16. In this survey, the internationally accepted cut-off for the HTQ-16 was used.

## Survey questionnaire

Two questionnaires were administered electronically during the KMHS 2015: the Household Demographics Questionnaire and the Personal Interview Questionnaire. These questionnaires were developed using multiple methods of free-listing, FGDs and cultural validation carried out between February to July 2015. Questionnaires were translated from English into Kashmiri and Urdu, were reviewed by mental health experts, and were revised and pre-tested on 1st October 2015. Final revisions were made and an electronic version of the questionnaire was created using ODK software.

*In a face to face interview a household demographics questionnaire was administered to the household head in order to capture specific demographic details of the household, including:*

- Complete list of household members and demographics
- Family history of mental illness
- Household's dependence on others for living

The Personal Interview Questionnaire was then administered in a face to face interview to a randomly selected individual of that household aged 18 years or older. Individuals were asked questions relating to the following topics:

- Additional demographic details
- Functionality
- Problems of daily life
- Substance use
- Symptoms of depression and anxiety (HSCL-25)
- Coping strategies
- Traumatic events
- Symptoms of PTSD (HTQ-16)

## Sampling

We adopted a multi-stage probability based sampling design. The sampling frame for each of the 10 districts was obtained from the 2011 Census data with villages as enumeration areas. In the first stage of sampling we drew a random sample of 40 villages per district using probability sampling proportional to size. In the second stage of sampling we used two methods; in rural areas we drew a random sample of 14 households per village using the prior list dependent method, based on the list of households kept by the village head. In urban areas we randomly generated 14 global positioning system (GPS) points and the household closest to the point was selected for interview. In the final stage of sampling a household roster was obtained from the head of the household and one household 18 years of age or older was randomly selected for interview. We aimed for 560 participants per district, based on sample size calculations ($\alpha$=0.05, 95%CI) and the number of interviews the team

could feasibly conduct during the time period they had in the village. The use of probability based sampling ensured a representative sample with the ability to extrapolate estimates to the population of the Kashmir Valley.

## Recruitment and training of field staff

Enumerators were recruited from a pool of sociology, social work and psychology postgraduates with representation from northern and southern districts to address linguistic and cultural differences. A total of 53 enumerators were trained between 17th and 30th September 2015. Training consisted of theoretical and practical sessions; presentations included research ethics, interview techniques, systematic review of the questionnaire, administration of psychological first aid and referral. Additional training on using the electronic questionnaire, uploading completed forms, using GPS navigation tools (Maverick) was provided in practical sessions. Training was conducted by the principal researcher (an epidemiologist), clinical psychologists, an information technology expert and members of the MSF Srinagar project team. Enumerators had ample opportunity to conduct practice interviews and become familiar with the technology prior to commencing fieldwork. Ten team leaders were selected from the pool of enumerators and received additional training on leadership, liaising with village leaders, sampling at village level and security.

## Fieldwork

Data collection was carried out by 10 teams, each consisting of one team leader and four enumerators with a mix of males and females in each team. All 10 teams commenced the survey in Srinagar on 5th October 2015 to facilitate supervision, problem solving and technical support. Four debriefing sessions were conducted during the data collection period involving all enumerators, team leaders and coordinators. Northern and southern teams also had regular separate debriefings during the data collection period. These sessions created the opportunity to give updates on progress, provide feedback to teams, and discuss problems and solutions experienced by teams.

Each enumerator conducted approximately four interviews each day, with each interview lasting 40-60 minutes. In total, each enumerator conducted approximately 110 interviews during the data collection period.

FGDs were conducted on Tuesdays and Wednesdays during the fieldwork period. The village was selected according to convenience, based on where the teams were travelling on those days. A total of 10 villages, one from each district, were included and two FGDs per village were conducted.

## Consent

The purpose of the study and the content of the interview were explained to all respondents. They received a written information sheet, translated into Urdu (this was read out in Urdu or Kashmiri if the respondent was illiterate) and were asked to sign a consent form. In instances where participants were unable to sign (due to illiteracy) they were asked to mark the form with an 'X' or another symbol to indicate that they were consenting to the interview. The information sheet contained contact numbers so that the respondent or their family members could discuss the survey with someone if they wished. No incentive was offered for participation in the survey.

If a respondent become distressed during the interview it was stopped and psychological first aid was administered by the trained enumerator. The interview resumed only if the respondent was willing and able to continue answering the questions. In nine cases the interview was discontinued. When respondents were assessed as in need of psychological or psychiatric services they were referred to the closest mental health service provider. All enumerators had referral forms with a complete list of MSF and Ministry of Health clinics, locations, days of operation and contact numbers which they distributed when required. Enumerators also had telephone access to an experienced MSF counsellor (and research associate on the study) if they needed advice or further support after administering psychological first aid.

## Survey data management and analysis

The KMHS 2015 used Asus tablets with electronic questionnaires developed by MSF technical support staff. Data was transferred daily by team leaders to a secure server based at the MSF office in New Delhi. Once the questionnaire was uploaded it was no longer accessible on the tablet. The data was password-protected on the server, with the primary researcher (an MSF epidemiologist) and an information technology support manager having sole access. Concurrent data collection and analysis facilitated timely monitoring of data quality parameters and preliminary analysis which could be fed back to coordinators and study teams for improved performance. The data entry and editing phase of the survey was completed in February 2016.

MP3 recordings of FGDs were saved and downloaded onto the team leaders' computers. A copy of the recordings was also stored on the lead researcher's computer and password-protected.

Data was downloaded from a secure server, cleaned and coded for analysis. 5428 interviews were available for analysis. Data was weighted for the complex sampling design and post-stratification weights were calculated to account for the over-representation of women in the sample. Specific district weights were calculated for district-level analysis.

Descriptive analysis was conducted, providing a summary of all variables, using Spearman's r correlations. Means (M), SDs and CIs are reported where relevant. SEs were estimated using the Taylor series linearisation method to adjust for design effects. (58) The Wilcoxon-Mann-Whitney test was utilised to assess variable distributions in two independent groups and the Kruskal Wallis test was used to examine differences between an independent categorical variable and an ordinal dependent variable. A chi-squared test was used to determine if there was a relationship between two categorical variables.

Mean scores were estimated with SEs and 95% CIs. Kashmiri validated cut-off scores were used to estimate the proportion of respondents with probable anxiety, depression and PTSD. Diagnostic algorithms for PTSD and depression were used to estimate the prevalence of severe disorders.

Univariate logistic analysis was used to calculate crude odds ratios, identifying evidence of association with study outcomes and risk factors for inclusion in the multivariate analysis. Multivariate logistic regression analysis was used to calculate adjusted odds ratios, assessing associations between having a probable diagnosis of anxiety, depression or PTSD and risk factors.

Data analysis was conducted in Stata (Stata Corp) version 13.0.

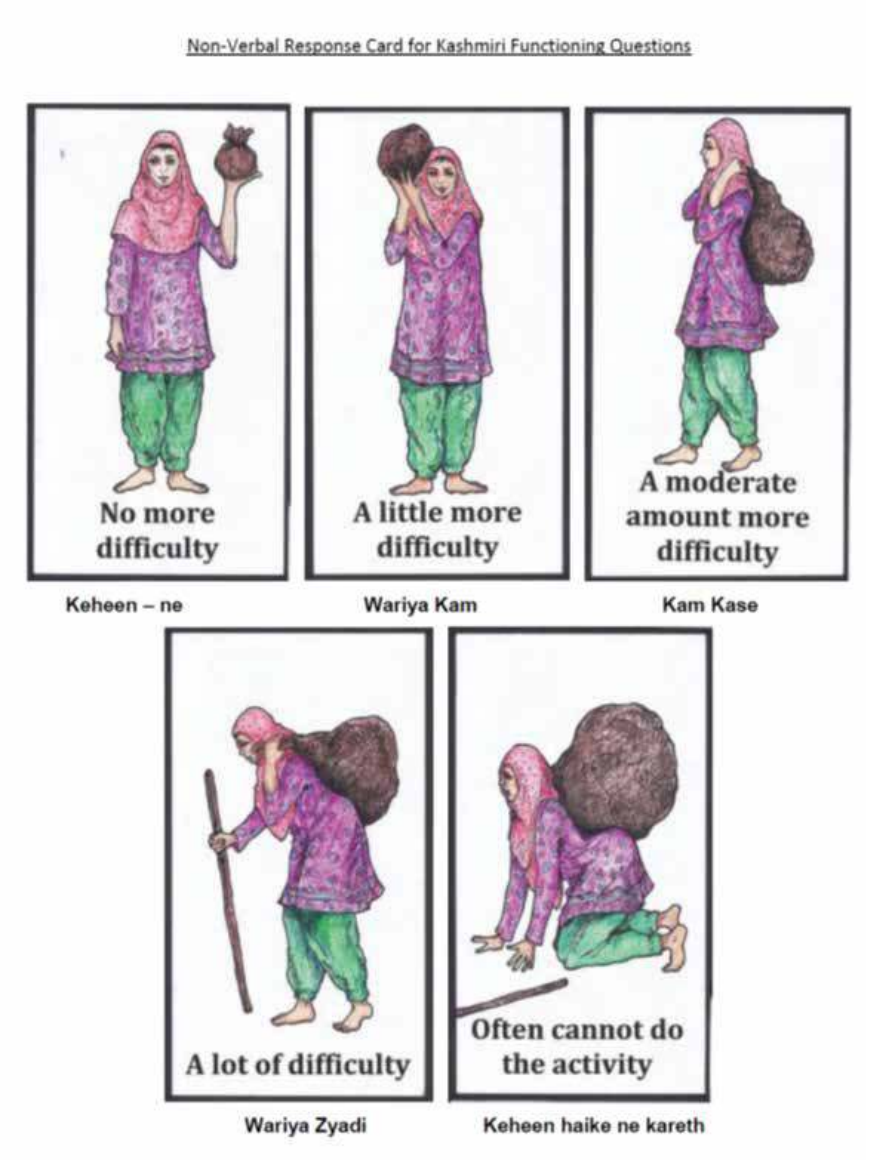
## Analysis of focus group data

Focus group participants were recruited via a snowball sampling method through the village leader. FGDs were led by one male and one female MSF clinical psychologist, with a trained survey enumerator acting as note taker. Verbal consent was sought from all participants for interview and data was audio-recorded with MP3 technology, ensuring an accurate and complete verbatim record of both the researchers' questions and the participants' responses. Qualitative data was transcribed with English transliteration of the spoken Kashmiri. The purpose of the qualitative analysis was to identify themes that rooted in the reality of the perceptions and experiences of mental distress and service provision in the context of the Kashmir Valley.

Continual referencing back to the data during analysis ensured that the analytical process was firmly grounded in the actual data. After regaining familiarity with the data, 'open' coding (59) was conducted in order to identify new ideas, relationships, patterns between perceptions and experiences of mental health/illness. Once primary categories and relationships were developed, the transcripts were explored in depth in a second stage of coding. During this stage connections between categories and relationships were identified and existing codes subcategorised into and allocated to minor themes. This process is known in the literature as 'axial coding' or the

practice of making connections. (59, 60) In this way more specific experiences concerned with perceptions of mental health/illness and access to service were given a title or name. The final stage of coding grouped minor themes into major themes. Strauss and Corbin (1990) describe this phase as the process by which all categories are structured around a central or 'core' category. (59) Transcripts were re-examined and quotes illustrating each of the identified themes selected.

During this coding process, common themes were identified with respect to the participants' perceptions and experiences of mental health issues, health-seeking behaviours and perceived service needs. This report presents preliminary findings from 6 analysed FGDs.



## APPENDIX 2: SUPPLEMENTARY TABLES

Table A1: Distribution of respondents by age group, main activity, marital status, education and area, KMHS 2015

| | Total (n=5428) | | | Males (n=1919) | | Females (n=3509) | |
|---|---|---|---|---|---|---|---|
| | Total | Prop | Se | Prop | Se | Prop | Se |
| **Mean age (SD)** | **38.2 (0.21)** | | | **40.6 (0.39)** | | **37.0 (0.24)** | 0.2401 |
| **Age Group** | | | | | | | |
| 18-34 years | **2449** | 45.1% | 0.0068 | 42.4% | 0.0113 | 46.6% | 0.0084 |
| 35-55 years | **1943** | 29.7% | 0.3580 | 32.2% | 0.0107 | 37.8% | 0.0082 |
| 55+ years | **1036** | 19.1% | 0.0053 | 25.4% | 0.0099 | 15.6% | 0.0061 |
| **Main Activity** | | | | | | | |
| Some Employment | **886** | 16.3% | 0.0050 | 37.8% | 0.0111 | 4.6% | 0.0035 |
| Family Business | **449** | 8.3% | 0.0037 | 22.4% | 0.0095 | 0.6% | 0.0013 |
| Student | **705** | 13.0% | 0.0046 | 16.7% | 0.0085 | 11.0% | 0.0053 |
| Unemployed/Retired | **385** | 7.1% | 0.0035 | 14.9% | 0.0081 | 2.8% | 0.0028 |
| Home Duties | **3000** | 55.3% | 0.0068 | 8.2% | 0.0063 | 81.0% | 0.0066 |
| **Marital Status** | | | | | | | |
| Never Married | **1438** | 26.5% | 0.0060 | 30.2% | 0.0105 | 24.5% | 0.0073 |
| Married | **3706** | 68.4% | 0.0063 | 66.5% | 0.0108 | 69.4% | 0.0078 |
| Widowed/Divorced/Separated | **275** | 5.1% | 0.0030 | 3.2% | 0.0040 | 6.1% | 0.0040 |
| **Education** | | | | | | | |
| None | **1899** | 35.1% | 0.0065 | 22.9% | 0.0096 | 41.8% | 0.0084 |
| Primary | **775** | 14.3% | 0.0048 | 16.8% | 0.0086 | 13.0% | 0.0057 |
| High | **1694** | 31.4% | 0.0063 | 37.4% | 0.0111 | 28.1% | 0.0076 |
| Graduate | **787** | 14.6% | 0.0048 | 20.4% | 0.0092 | 11.4% | 0.0054 |
| Vocational | **248** | 4.6% | 0.0028 | 2.5% | 0.0036 | 5.7% | 0.0039 |
| **Area** | | | | | | | |
| Rural | **4216** | 77.7% | 0.0057 | 80.0% | 0.0091 | 76.4% | 0.0072 |
| Urban | **1212** | 22.3% | 0.0057 | 20.0% | 0.0091 | 23.6% | 0.0072 |
| **District** | | | | | | | |
| Srinagar | **554** | 10.2% | 0.0041 | 9.1% | 0.0066 | 10.8% | 0.0052 |
| Anantnag | **550** | 10.1% | 0.0041 | 10.3% | 0.0069 | 10.1% | 0.0051 |
| Badgam | **538** | 9.9% | 0.0041 | 10.5% | 0.0070 | 9.6% | 0.0050 |
| Baramulla | **543** | 10.0% | 0.0041 | 9.6% | 0.0067 | 10.2% | 0.0051 |
| Pulwama | **550** | 10.1% | 0.0041 | 10.1% | 0.0069 | 10.1% | 0.0051 |
| Kulgam | **535** | 9.9% | 0.0040 | 9.4% | 0.0067 | 10.1% | 0.0051 |
| Kupwara | **524** | 9.7% | 0.0040 | 9.9% | 0.0068 | 9.5% | 0.0050 |
| Ganderbal | **538** | 9.9% | 0.0041 | 10.5% | 0.0070 | 9.6% | 0.0050 |
| Bandipora | **553** | 10.2% | 0.0041 | 11.5% | 0.0073 | 9.5% | 0.0049 |
| Shopiyan | **543** | 10.0% | 0.0041 | 9.2% | 0.0066 | 10.5% | 0.0052 |

SE = standard error, Prop = proportion

Table A2: Weighted district prevalence rates of symptoms of depression, anxiety and PTSD in the Kashmir Valley, KMHS 2015

| Region | Depression | | | | Anxiety | | | | PTSD | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Proportion | Se | 95% | CI | Proportion | Se | 95% | CI | Proportion | Se | 95% | CI |
| **Kashmir Valley*** | 41.3% | 0.0106 | 39.2% | 43.4% | 25.6% | 0.0095 | 23.8% | 27.5% | 19.2% | 0.0095 | 17.5% | 21.2% |
| **Srinagar** | 27.5% | 0.0252 | 22.7% | 32.9% | 15.8% | 0.0181 | 12.5% | 19.8% | 10.6% | 0.0178 | 7.5% | 14.8% |
| **Anantnag** | 37.5% | 0.0300 | 31.7% | 43.7% | 19.4% | 0.0215 | 15.4% | 24.1% | 17.8% | 0.0239 | 13.5% | 23.1% |
| **Badgam** | 53.7% | 0.0359 | 46.4% | 60.8% | 35.8% | 0.0338 | 29.3% | 42.9% | 25.9% | 0.0291 | 20.5% | 32.2% |
| **Baramulla** | 51.1% | 0.0355 | 43.9% | 58.2% | 33.7% | 0.0311 | 27.7% | 40.3% | 26.5% | 0.0366 | 19.7% | 34.5% |
| **Pulwama** | 36.4% | 0.0275 | 31.0% | 42.1% | 20.4% | 0.0201 | 16.6% | 24.7% | 16.6% | 0.0211 | 12.7% | 21.3% |
| **Kulgam** | 43.8% | 0.0332 | 37.3% | 50.6% | 29.9% | 0.0292 | 24.3% | 36.1% | 24.8% | 0.0285 | 19.5% | 30.9% |
| **Kupwara** | 41.7% | 0.0256 | 36.6% | 47.0% | 27.8% | 0.0337 | 21.5% | 35.1% | 18.5% | 0.0290 | 13.3% | 25.1% |
| **Ganderbal** | 37.7% | 0.0268 | 32.4% | 43.3% | 22.0% | 0.0246 | 17.4% | 27.4% | 14.7% | 0.0168 | 11.6% | 18.4% |
| **Bandipora** | 41.7% | 0.0349 | 34.9% | 48.9% | 27.5% | 0.0329 | 21.4% | 34.6% | 17.4% | 0.0332 | 11.7% | 25.2% |
| **Shopiyan** | 43.2% | 0.0276 | 37.8% | 48.9% | 27.0% | 0.0253 | 22.2% | 32.5% | 22.2% | 0.0219 | 18.1% | 27.0% |

* Pooled prevalence rate for the Kashmir Valley. Se = standard error; CI =confidence interval

Table A3: Weighted lifetime prevalence of traumatic events by sex, KMHS 2015

| | Total Proportion | Men Proportion | Women Proportion | Difference | 95% CI Difference | p-value |
|---|---|---|---|---|---|---|
| **Natural disaster** | 93.5% | 93.5% | 93.5% | 0.0% | -1.4%-1.5% | 0.927 |
| **Conflict-related** | 93.0% | 94.2% | 90.4% | 3.8% | 2.7%-5.5% | <0.001 |
| Fire or explosion | 73.4% | 78.6% | 62.8% | 15.9% | 14.3%-19.2% | <0.001 |
| Assault with a weapon | 33.7% | 38.6% | 23.6% | 15.0% | 10.9%-16.1% | <0.001 |
| Militant or military attacks | 41.8% | 46.8% | 31.7% | 15.1% | 11.8%-17.3% | <0.001 |
| Crackdowns, round-up raids, frisking | 81.1% | 82.7% | 77.6% | 5.1% | 2.5%-6.7% | <0.001 |
| Captivity – kidnapped/imprisoned/hostage | 32.4% | 36.7% | 23.5% | 13.2% | 10.4%-15.7% | <0.001 |
| Interrogation/harassment with threat to life | 33.0% | 36.0% | 26.7% | 9.3% | 8.8%-14.1% | <0.001 |
| Torture | 27.9% | 31.2% | 21.3% | 9.9% | 8.8%-13.9% | <0.001 |
| **Death of a loved one** | 70.6% | 74.0% | 63.6% | 10.4% | 7.8%-12.9% | <0.001 |
| Violent death | 48.7% | 51.7% | 42.7% | 9.0% | 6.0%-11.6% | <0.001 |
| Sudden death | 59.5% | 62.4% | 53.6% | 8.8% | 6.1%-11.6% | <0.001 |
| **Separation from loved one** | 25.7% | 28.2% | 20.6% | 7.6% | 5.3%-10.2% | <0.001 |
| Disappearance | 15.7% | 17.1% | 12.0% | 5.1% | 3.0%-7.1% | <0.001 |
| Forced separation | 15.4% | 16.9% | 13.3% | 3.6% | 1.7%-6.0% | 0.008 |
| **Life trauma** | 75.7% | 80.8% | 65.4% | 15.4% | 12.5%-17.3% | <0.001 |
| Transport accident | 54.2% | 63.0% | 36.2% | 26.8% | 23.1%-28.6% | <0.001 |
| Work accident | 41.8% | 45.4% | 34.5% | 10.9% | 9.0%-14.6% | <0.001 |
| Life-threatening illness | 45.6% | 48.8% | 39.1% | 9.6% | 6.3%-11.9% | <0.001 |
| **Sexual trauma** | 11.1% | 12.2% | 9.0% | 3.2% | 1.7%-5.3% | 0.007 |
| Sexual assault | 9.2% | 10.3% | 7.0% | 3.3% | 2.4%-5.7% | 0.003 |
| Bad sexual experience | 8.3% | 9.1% | 6.9% | 2.2% | 0.8%-4.0% | 0.033 |
| **Physical trauma** | 60.2% | 66.4% | 47.3% | 19.1% | 14.8%-20.3% | <0.001 |
| **Loss of property/belongings** | 51.1% | 53.6% | 45.9% | 7.7% | 5.5%-11.2% | <0.001 |

CI = confidence interval

Table A4: Weighted lifetime number of traumatic events experienced or witnessed, by sex, KMHS 2015

| | Total | Men | Women | | Overall |
|---|---|---|---|---|---|
| | Proportion | Proportion | Proportion | Difference | p-value |
| **Traumatic Events** | | | | | **<0.001** |
| No traumatic events | 1.1% | 0.6% | 11.1% | 0.6% | |
| 1-2 traumatic events | 9.7% | 7.3% | 14.7% | 7.4% | |
| 3-5 traumatic events | 23.5% | 19.4% | 31.8% | 12.4% | |
| 6-10 traumatic events | 39.7% | 41.0% | 37.1% | 3.9% | |
| >10 traumatic events | 26.3% | 31.7% | 15.3% | 16.5% | |

Table A5a: Weighted proportion of traumatic events experienced or witnessed by respondents over a lifetime, by district, KMHS 2015

| Life Events Check-list | Srinagar | | Anantnag | | Badgam | | Baramulla | | Pulwama | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Proportion | SE | Proportion | SE | Proportion | SE | Proportion | SE | Proportion | SE |
| **Natural Disaster** | 92.9% | 0.0193 | 93.4% | 0.0189 | 98.6% | 0.0061 | 97.2% | 0.0137 | 92.1% | 0.0219 |
| **Any conflict related trauma** | 86.9% | 0.0210 | 93.5% | 0.0180 | 96.4% | 0.0094 | 95.6% | 0.0183 | 93.8% | 0.0188 |
| Fire or explosion | 59.9% | 0.0360 | 70.3% | 0.0324 | 81.8% | 0.0233 | 80.9% | 0.0332 | 69.2% | 0.0311 |
| Assault with a weapon | 29.6% | 0.0310 | 30.1% | 0.0322 | 38.4% | 0.0261 | 38.3% | 0.0355 | 32.8% | 0.0324 |
| Militant or military attacks | 37.3% | 0.0340 | 39.8% | 0.0299 | 40.8% | 0.0327 | 52.5% | 0.0297 | 41.2% | 0.0320 |
| Crackdowns, round up raids, frisking | 63.9% | 0.0297 | 88.4% | 0.0238 | 85.0% | 0.0257 | 87.9% | 0.0278 | 88.3% | 0.0264 |
| Captivity - kidnapped/imprisoned/hostage | 28.4% | 0.0323 | 28.4% | 0.0283 | 42.2% | 0.0270 | 40.3% | 0.0380 | 27.5% | 0.0273 |
| Interrogation/harassment with threat to life | 28.6% | 0.0279 | 32.3% | 0.0302 | 40.4% | 0.0328 | 35.8% | 0.0283 | 28.1% | 0.0269 |
| Torture | 26.2% | 0.0331 | 22.8% | 0.0232 | 35.5% | 0.0293 | 30.1% | 0.0317 | 26.4% | 0.0298 |
| **Any sudden or violent death** | 64.8% | 0.0303 | 65.0% | 0.0320 | 78.3% | 0.0231 | 75.7% | 0.0338 | 69.8% | 0.0230 |
| Violent Death | 39.0% | 0.0272 | 42.6% | 0.0340 | 60.0% | 0.0230 | 55.9% | 0.0391 | 48.3% | 0.0319 |
| Sudden Death | 57.4% | 0.0368 | 51.9% | 0.0362 | 67.5% | 0.0277 | 65.1% | 0.0378 | 54.0% | 0.0302 |
| **Any forced separation or disappearance** | 23.7% | 0.0319 | 19.7% | 0.0252 | 32.3% | 0.0383 | 33.9% | 0.0278 | 16.7% | 0.0202 |
| Disappearance | 11.8% | 0.0216 | 10.6% | 0.0198 | 17.0% | 0.0258 | 21.0% | 0.0238 | 10.4% | 0.0160 |
| Forced Separation | 16.5% | 0.0247 | 13.0% | 0.0238 | 22.7% | 0.0314 | 19.3% | 0.0241 | 10.2% | 0.0194 |
| **Any life trauma** | 72.8% | 0.0280 | 71.2% | 0.0279 | 83.2% | 0.0223 | 82.1% | 0.0249 | 74.6% | 0.0256 |
| Transport Accident | 54.2% | 0.0358 | 49.7% | 0.0311 | 57.5% | 0.0316 | 58.9% | 0.0302 | 51.3% | 0.0232 |
| Work Accident | 30.0% | 0.0240 | 35.5% | 0.0283 | 52.4% | 0.0278 | 57.1% | 0.0354 | 34.7% | 0.0268 |
| Life threatening illness | 44.8% | 0.0326 | 41.9% | 0.0343 | 51.7% | 0.0304 | 52.7% | 0.0350 | 48.2% | 0.0318 |
| Any sexual trauma | 8.2% | 0.0149 | 11.0% | 0.0226 | 15.2% | 0.0219 | 15.2% | 0.0204 | 7.7% | 0.0166 |
| Sexual assault | 7.6% | 0.0143 | 10.2% | 0.0223 | 10.0% | 0.0209 | 13.0% | 0.0202 | 5.3% | 0.0129 |
| Bad sexual experience | 6.5% | 0.0146 | 9.0% | 0.0209 | 11.6% | 0.0211 | 10.7% | 0.0164 | 5.3% | 0.0158 |
| **Physical Trauma** | 47.4% | 0.0326 | 56.8% | 0.0369 | 70.9% | 0.0290 | 72.1% | 0.0276 | 53.4% | 0.0315 |
| **Loss of property/belongings** | 56.4% | 0.0426 | 42.3% | 0.0453 | 51.9% | 0.0341 | 63.9% | 0.0401 | 46.4% | 0.0318 |
| **Multiple Trauma** | | | | | | | | | | |
| No traumatic events | 0.7% | 0.0044 | 0.7% | 0.0034 | 0.1% | 0.0009 | 0.3% | 0.0033 | 1.2% | 0.0060 |
| 1-2 traumatic events | 18.6% | 0.0234 | 7.7% | 0.0202 | 4.3% | 0.0091 | 6.2% | 0.0162 | 9.0% | 0.0175 |
| 3-5 traumatic events | 32.2% | 0.0276 | 28.1% | 0.0302 | 15.7% | 0.0223 | 11.4% | 0.0152 | 26.9% | 0.0264 |
| 6-10 traumatic events | 33.3% | 0.0258 | 39.9% | 0.0285 | 42.4% | 0.0318 | 46.9% | 0.0287 | 37.1% | 0.0284 |
| >10 traumatic events | 15.1% | 0.0186 | 23.6% | 0.0295 | 37.5% | 0.0307 | 35.1% | 0.0307 | 25.9% | 0.0285 |

Table A5b: Weighted Proportion of traumatic events experienced or witnessed by respondents over a lifetime, by district, KMHS 2015

| Life Events Check-list | Kulgam | | Kupwara | | Ganderbal | | Bandipora | | Shopiyan | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Proportion | SE | Proportion | SE | Proportion | SE | Proportion | SE | Proportion | SE |
| **Natural Disaster** | 98.7% | 0.0068 | 90.4% | 0.0201 | 81.0% | 0.0387 | 87.9% | 0.0265 | 96.6% | 0.0150 |
| **Any conflict related trauma** | 97.2% | 0.0086 | 92.0% | 0.0124 | 90.1% | 0.0188 | 91.1% | 0.0164 | 97.9% | 0.0099 |
| Fire or explosion | 77.8% | 0.0262 | 78.1% | 0.0270 | 65.4% | 0.0397 | 76.8% | 0.0217 | 77.6% | 0.0314 |
| Assault with a weapon | 37.2% | 0.0356 | 31.9% | 0.0374 | 22.9% | 0.0330 | 38.4% | 0.0372 | 40.3% | 0.0285 |
| Militant or military attacks | 48.4% | 0.0284 | 39.0% | 0.0339 | 33.4% | 0.0354 | 39.6% | 0.0403 | 43.6% | 0.0291 |
| Crackdowns, round up raids, frisking | 94.7% | 0.0108 | 72.0% | 0.0299 | 77.0% | 0.0267 | 71.0% | 0.0347 | 96.9% | 0.0109 |
| Captivity - kidnapped/imprisoned/hostage | 37.9% | 0.0283 | 26.5% | 0.0293 | 22.8% | 0.0300 | 34.4% | 0.0385 | 33.0% | 0.0264 |
| Interrogation/harassment with threat to life | 46.1% | 0.0292 | 25.0% | 0.0261 | 26.8% | 0.0293 | 30.9% | 0.0356 | 43.8% | 0.0317 |
| Torture | 38.7% | 0.0307 | 22.9% | 0.0279 | 25.1% | 0.0337 | 26.4% | 0.0252 | 32.7% | 0.0289 |
| **Any sudden or violent death** | 74.0% | 0.0229 | 71.2% | 0.0315 | 64.4% | 0.0330 | 71.4% | 0.0313 | 76.1% | 0.0239 |
| Violent Death | 51.2% | 0.0307 | 49.4% | 0.0332 | 42.1% | 0.0370 | 48.3% | 0.0337 | 55.6% | 0.0308 |
| Sudden Death | 62.9% | 0.0304 | 59.1% | 0.0361 | 54.1% | 0.0363 | 63.4% | 0.0301 | 61.8% | 0.0344 |
| **Any forced separation or disappearance** | 29.3% | 0.0277 | 24.3% | 0.0314 | 22.7% | 0.0329 | 28.6% | 0.0287 | 25.6% | 0.0281 |
| Disappearance | 18.2% | 0.0229 | 18.7% | 0.0313 | 14.5% | 0.0297 | 20.9% | 0.0211 | 12.5% | 0.0172 |
| Forced Separation | 17.0% | 0.0268 | 10.7% | 0.0199 | 14.1% | 0.0225 | 17.2% | 0.0209 | 16.8% | 0.0225 |
| **Any life trauma** | 81.4% | 0.0178 | 69.7% | 0.0267 | 69.0% | 0.0347 | 74.7% | 0.0261 | 83.0% | 0.0201 |
| Transport Accident | 59.2% | 0.0272 | 51.6% | 0.0261 | 50.6% | 0.0375 | 54.2% | 0.0301 | 55.9% | 0.0303 |
| Work Accident | 43.4% | 0.0297 | 41.0% | 0.0358 | 36.1% | 0.0390 | 41.2% | 0.0355 | 45.7% | 0.0260 |
| Life threatening illness | 52.0% | 0.0315 | 36.4% | 0.0373 | 35.9% | 0.0333 | 36.9% | 0.0318 | 58.0% | 0.0319 |
| Any sexual trauma | 11.5% | 0.0245 | 8.4% | 0.0182 | 10.0% | 0.0200 | 10.4% | 0.0188 | 12.5% | 0.0275 |
| Sexual assault | 9.2% | 0.0221 | 7.4% | 0.0175 | 8.2% | 0.0203 | 9.2% | 0.0182 | 10.5% | 0.0220 |
| Bad sexual experience | 8.3% | 0.0202 | 6.8% | 0.0187 | 7.0% | 0.0145 | 6.8% | 0.0146 | 9.1% | 0.0220 |
| **Physical Trauma** | 63.4% | 0.0285 | 60.7% | 0.0361 | 52.3% | 0.0340 | 56.8% | 0.0323 | 67.2% | 0.0254 |
| **Loss of property/belongings** | 58.6% | 0.0401 | 42.6% | 0.0394 | 36.6% | 0.0334 | 53.5% | 0.0494 | 55.2% | 0.0308 |
| **Multiple Trauma** | | | | | | | | | | |
| No traumatic events | 0.0% | 0.0000 | 1.4% | 0.0067 | 2.4% | 0.0086 | 1.1% | 0.0058 | 0.0% | 0.0000 |
| 1-2 traumatic events | 3.8% | 0.0092 | 11.6% | 0.0141 | 14.9% | 0.0251 | 12.2% | 0.0193 | 3.5% | 0.0104 |
| 3-5 traumatic events | 17.5% | 0.0199 | 26.4% | 0.0239 | 26.8% | 0.0285 | 27.6% | 0.0279 | 19.3% | 0.0201 |
| 6-10 traumatic events | 41.7% | 0.0329 | 40.5% | 0.0271 | 35.0% | 0.0283 | 35.5% | 0.0299 | 42.4% | 0.0279 |
| >10 traumatic events | 37.0% | 0.0305 | 20.1% | 0.0322 | 21.0% | 0.0334 | 23.6% | 0.0325 | 34.8% | 0.0279 |

Table A6: Weighted traumatic experiences by those identified as having mental distress, KMHS 2015

| Life Events Check-list | Mental Distress | | No Mental Distress | | Co-morbidity1 | |
|---|---|---|---|---|---|---|
| | Prop | Se | Prop | Se | Prop | Se |
| **Natural Disaster** | 94.4% | 0.0072 | 93.0% | 0.0077 | 93.8% | 0.0091 |
| **Any conflict related trauma** | 95.5% | 0.0054 | 91.0% | 0.0094 | 96.2% | 0.0056 |
| Fire or explosion | 77.1% | 0.0125 | 70.3% | 0.0149 | 78.5% | 0.0148 |
| Assault with a weapon | 37.9% | 0.0152 | 30.3% | 0.0149 | 40.7% | 0.0198 |
| Militant or Military attacks | 48.3% | 0.0148 | 36.4% | 0.0142 | 50.2% | 0.0171 |
| Crackdowns, round up raids, frisking | 85.3% | 0.0103 | 78.0% | 0.0134 | 86.6% | 0.0126 |
| Captivity - kidnapped/imprisoned/hostage | 38.6% | 0.0154 | 27.3% | 0.0138 | 41.7% | 0.0197 |
| Interrogation/harassment with threat to life | 39.1% | 0.0135 | 28.2% | 0.0136 | 42.3% | 0.0175 |
| Torture | 34.0% | 0.0136 | 23.2% | 0.0130 | 37.1% | 0.0170 |
| **Any sudden or violent death** | 76.2% | 0.0127 | 65.9% | 0.0151 | 78.8% | 0.0154 |
| Violent Death | 55.2% | 0.0148 | 43.5% | 0.0153 | 58.0% | 0.0188 |
| Sudden Death | 65.1% | 0.0139 | 54.9% | 0.0169 | 67.5% | 0.0167 |
| **Any forced separation or disappearance** | 32.2% | 0.0139 | 20.1% | 0.0139 | 35.2% | 0.0181 |
| Disappearance | 17.3% | 0.0114 | 13.8% | 0.0114 | 18.3% | 0.0145 |
| Forced Separation | 22.4% | 0.0129 | 10.1% | 0.0100 | 25.5% | 0.0169 |
| **Any life trauma** | 81.0% | 0.0100 | 71.7% | 0.0132 | 83.5% | 0.0115 |
| Transport Accident | 56.2% | 0.0138 | 52.8% | 0.0149 | 58.5% | 0.0169 |
| Work Accident | 50.1% | 0.0151 | 34.6% | 0.0139 | 53.9% | 0.0193 |
| Life threatening illness | 51.7% | 0.0147 | 41.0% | 0.0158 | 52.7% | 0.0180 |
| **Any sexual trauma** | 14.1% | 0.0107 | 8.5% | 0.0084 | 15.6% | 0.0144 |
| Sexual assault | 11.4% | 0.0103 | 7.3% | 0.0078 | 12.6% | 0.0140 |
| Bad sexual experience | 10.7% | 0.0096 | 6.2% | 0.0073 | 11.7% | 0.0127 |
| **Physical Trauma** | 67.4% | 0.0129 | 54.0% | 0.0163 | 69.4% | 0.0146 |
| **Loss of property/belongings** | 56.8% | 0.0169 | 46.7% | 0.0173 | 59.2% | 0.0193 |
| **Multiple Trauma** | | | | | | |
| No traumatic events | 0.4% | 0.0014 | 1.0% | 0.0024 | 0.3% | 0.0017 |
| 1-2 traumatic events | 5.6% | 0.0053 | 13.0% | 0.0104 | 4.0% | 0.0058 |
| 3-5 traumatic events | 18.8% | 0.0110 | 27.2% | 0.0130 | 16.0% | 0.0114 |
| 6-10 traumatic events | 40.4% | 0.0128 | 39.0% | 0.0147 | 42.0% | 0.0161 |
| >10 traumatic events | 34.8% | 0.0144 | 19.7% | 0.0126 | 37.7% | 0.0185 |

Prop = proportion, Se = standard error
1. Co-morbidity is defined as anyone experiencing 2 or more mental disorders

Table A7: Multivariate logistic regression on variables associated with Depression, KMHS 2015

| Variables | OR | Se | 95% | CI | p-value |
|---|---|---|---|---|---|
| **Sex** | | | | | |
| Male | 1.00 | (base) | | | |
| Female | 1.73 | 0.1937 | 1.39 | 2.16 | <0.001 |
| **Age Group** | | | | | **0.1221** |
| 18-34 years | 1.00 | (base) | | | |
| 35-54 | 1.11 | 0.1067 | 0.92 | 1.34 | 0.2930 |
| 55+ | 1.31 | 0.1717 | 1.01 | 1.69 | 0.041 |
| **Education** | | | | | <**0.001** |
| None | 1.39 | 0.1667 | 1.10 | 1.76 | 0.007 |
| Primary | 1.00 | (base) | | | |
| Secondary | 0.64 | 0.0807 | 0.50 | 0.82 | <0.001 |
| Graduate | 0.40 | 0.0615 | 0.29 | 0.54 | <0.001 |
| Vocational | 1.75 | 0.3690 | 1.16 | 2.65 | 0.008 |
| **Main Activity** | | | | | **0.006** |
| Employed | 1.00 | (base) | | | |
| Family Business | 0.67 | 0.1143 | 0.48 | 0.94 | 0.019 |
| Student | 1.20 | 0.1762 | 0.90 | 1.60 | 0.2100 |
| Unemployed / retired | 1.35 | 0.2257 | 0.97 | 1.87 | 0.0750 |
| Household Duty | 1.15 | 1.0500 | 0.88 | 1.49 | 0.2960 |
| **Marital Status** | | | | | **0.0781** |
| Not married | 1.00 | (base) | | | |
| Married | 0.98 | 0.1169 | 0.77 | 1.24 | 0.8500 |
| Widowed /Separated / Divorced | 1.44 | 0.3000 | 0.95 | 2.17 | 0.0840 |
| **Area** | | | | | |
| Rural | 1.18 | 0.1216 | 0.96 | 1.44 | 0.1180 |
| Urban | 1.00 | (base) | | | |
| **Traumatic Events** | | | | | <**0.001** |
| no trauma | 0.95 | 0.4490 | 0.37 | 2.41 | 0.9110 |
| 1-2 traumatic events | 1.00 | (base) | | | |
| 3-5 traumatic events | 1.79 | 0.2572 | 1.35 | 2.38 | <0.001 |
| 6-10 traumatic events | 3.86 | 0.5308 | 2.95 | 5.06 | <0.001 |
| > 10 traumatic events | 6.42 | 0.9795 | 4.75 | 8.66 | <0.001 |

OR = odds ratio; Se = standard error; CI = confidence interval

Table A8: Multivariate logistic regression on variables associated with Anxiety, KMHS 2015

| Variables | OR | Se | 95% | CI | p-value |
|---|---|---|---|---|---|
| **Sex** | | | | | |
| Male | 1.00 | | | | |
| Female | 1.88 | 0.2603 | 1.43 | 2.47 | <0.001 |
| **Age Group** | | | | | **0.7747** |
| 18-34 years | 1.00 | (base) | | | |
| 35-54 | 0.95 | 0.1020 | 0.77 | 1.17 | 0.6110 |
| 55+ | 1.02 | 0.1325 | 0.79 | 1.31 | 0.8990 |
| **Education** | | | | | <**0.001** |
| None | 1.46 | 0.1813 | 1.14 | 1.86 | 0.003 |
| Primary | 1.00 | (base) | | | |
| Secondary | 0.76 | 0.0987 | 0.59 | 0.98 | 0.034 |
| Graduate | 0.40 | 0.0714 | 0.28 | 0.57 | <0.001 |
| Vocational | 1.69 | 0.3411 | 1.14 | 2.51 | 0.01 |
| **Main Activity** | | | | | **0.033** |
| Employed | 1.00 | (base) | | | |
| Family Business | 0.70 | 0.1324 | 0.48 | 1.01 | 0.0590 |
| Student | 1.17 | 0.2103 | 0.82 | 1.67 | 0.3780 |
| Unemployed / retired | 1.16 | 0.2197 | 0.80 | 1.68 | 0.4430 |
| Household Duty | 1.31 | 0.2254 | 0.94 | 1.84 | 0.1130 |
| **Marital Status** | | | | | **0.1565** |
| Not married | 1.00 | (base) | | | |
| Married | 1.15 | 0.1598 | 0.88 | 1.52 | 0.2980 |
| Widowed /Separated / Divorced | 1.50 | 0.3139 | 0.99 | 2.26 | 0.0540 |
| **Area** | | | | | |
| Rural | 1.29 | 0.1361 | 1.05 | 1.59 | 0.015 |
| Urban | 1.00 | (base) | | | |
| **Traumatic Events** | | | | | <**0.001** |
| no trauma | 1.34 | 0.6056 | 0.55 | 3.26 | 0.5230 |
| 1-2 traumatic events | 1.00 | (base) | | | |
| 3-5 traumatic events | 1.97 | 0.2863 | 1.48 | 2.62 | <0.001 |
| 6-10 traumatic events | 3.56 | 0.4898 | 2.71 | 4.66 | <0.001 |
| > 10 traumatic events | 6.10 | 0.9440 | 4.50 | 8.27 | <0.001 |

OR = odds ratio; Se = standard error; CI = confidence interval

Table A9: Multivariate logistic regression on variables associated with PTSD, KMHS 2015

| Variables | OR | Se | 95% | CI | p-value |
|---|---|---|---|---|---|
| **Sex** | | | | | |
| Male | 1.00 | (base) | | | |
| Female | 2.01 | 0.2024 | 1.65 | 2.45 | <0.001 |
| **Age Group** | | | | | **0.018** |
| 18-34 years | 1.00 | (base) | | | |
| 35-54 | 1.22 | 0.1353 | 0.98 | 1.52 | 0.071 |
| 55+ | 1.47 | 0.1994 | 1.12 | 1.92 | 0.005 |
| **Marital Status** | | | | | **0.004** |
| Not married | 1.00 | (base) | | | |
| Married | 1.18 | 0.1506 | 0.92 | 1.52 | 0.195 |
| Widowed /Separated / Divorced | 1.98 | 0.4247 | 1.30 | 3.02 | 0.001 |
| **Area** | | | | | |
| Rural | 1.54 | 0.1965 | 1.20 | 1.98 | 0.001 |
| Urban | 1.00 | (base) | | | |
| **Traumatic Events** | | | | | <**0.001** |
| no trauma | 0.43 | 0.4584 | 0.05 | 3.47 | 0.430 |
| 1-2 traumatic events | 1.00 | (base) | | | |
| 3-5 traumatic events | 2.14 | 0.4730 | 1.39 | 3.31 | 0.001 |
| 6-10 traumatic events | 6.32 | 1.4116 | 4.07 | 9.80 | <0.001 |
| > 10 traumatic events | 12.39 | 2.8395 | 7.89 | 19.44 | <0.001 |

OR = odds ratio; SE = standard error; CI = confidence interval

## APPENDIX 3: DISTRICT PROFILES

Table 11a: Distribution of respondents by district, gender, age group, main activity, marital status, education and area, KMHS 2015

| | **Kulgam** (N=535) | | | **Kupwara** (N= 524) | | | **Ganderbal** (N= 538) | | | **Bandipora** (N= 55 ) | | | **Shopiyan** (N= 543) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **n** | **Prop** | **Se** | **n** | **Prop** | **Se** | **n** | **Prop** | **Se** | **n** | **Prop** | **Se** | **n** | **Prop** | **Se** |
| **Sex** | | | | | | | | | | | | | | | |
| Female | **180** | 66.4% | 0.0204 | **190** | 63.7% | 0.0210 | **201** | 62.6% | 0.0209 | **332** | 60.0% | 0.0208 | **367** | 67.6% | 0.0201 |
| Male | **355** | 33.6% | 0.0204 | **334** | 36.3% | 0.0210 | **337** | 37.4% | 0.0209 | **221** | 40.0% | 0.0208 | **176** | 32.4% | 0.0201 |
| **Mean age** | **36.9** | | 0.6579 | **37.1** | | 0.6892 | **36.7** | | 0.6228 | **37.7** | | 0.6463 | **40.1** | | 0.6706 |
| **Age group** | | | | | | | | | | | | | | | |
| 18-34 years | **245** | 47.5% | 0.0216 | **262** | 50.0% | 0.0219 | **262** | 48.7% | 0.0216 | **263** | 47.6% | 0.0213 | **211** | 38.9% | 0.0209 |
| 35-55 years | **190** | 35.5% | 0.0207 | **177** | 33.8% | 0.0207 | **187** | 34.8% | 0.0205 | **188** | 34.0% | 0.0202 | **210** | 38.7% | 0.0209 |
| 55+ years | **91** | 17.0% | 0.0163 | **85** | 16.2% | 0.0161 | **89** | 16.5% | 0.0160 | **102** | 18.4% | 0.0165 | **122** | 22.5% | 0.0179 |
| **Main activity** | | | | | | | | | | | | | | | |
| Some employment | **83** | 15.5% | 0.0157 | **101** | 19.3% | 0.0172 | **95** | 17.7% | 0.0165 | **120** | 21.7% | 0.0176 | **62** | 11.4% | 0.0137 |
| Family business | **38** | 7.1% | 0.0111 | **35** | 6.7% | 0.0109 | **48** | 8.9% | 0.0123 | **34** | 6.2% | 0.0102 | **81** | 14.9% | 0.0153 |
| Student | **77** | 14.4% | 0.0152 | **70** | 13.4% | 0.0149 | **74** | 13.8% | 0.0149 | **72** | 13.0% | 0.0143 | **56** | 10.3% | 0.0131 |
| Unemployed/retired | **41** | 7.7% | 0.0115 | **24** | 4.6% | 0.0091 | **37** | 6.9% | 0.0109 | **41** | 7.4% | 0.0112 | **31** | 5.7% | 0.0100 |
| Home duties | **296** | 55.3% | 0.0215 | **294** | 56.1% | 0.0217 | **284** | 52.8% | 0.0215 | **285** | 51.6% | 0.0213 | **313** | 57.6% | 0.0212 |
| **Marital status** | | | | | | | | | | | | | | | |
| Never married | **162** | 30.3% | 0.0199 | **138** | 26.3% | 0.0193 | **139** | 25.8% | 0.0189 | **155** | 28.2% | 0.0192 | **111** | 20.5% | 0.0174 |
| Married | **347** | 64.9% | 0.0207 | **369** | 70.4% | 0.0200 | **379** | 70.4% | 0.0197 | **365** | 66.5% | 0.0202 | **398** | 73.4% | 0.0190 |
| Widowed/divorced/separated | **26** | 4.9% | 0.0093 | **17** | 3.2% | 0.0077 | **20** | 3.7% | 0.0082 | **29** | 5.3% | 0.0096 | **33** | 6.1% | 0.0103 |
| **Education** | | | | | | | | | | | | | | | |
| None | **204** | 38.1% | 0.0210 | **159** | 30.4% | 0.0201 | **216** | 40.1% | 0.0212 | **173** | 31.6% | 0.0199 | **231** | 42.5% | 0.0212 |
| Primary | **79** | 14.8% | 0.0154 | **80** | 15.3% | 0.0158 | **88** | 16.4% | 0.0160 | **78** | 14.3% | 0.0150 | **89** | 16.4% | 0.0159 |
| High | **169** | 31.6% | 0.0201 | **180** | 34.4% | 0.0208 | **140** | 26.0% | 0.0189 | **183** | 33.5% | 0.0202 | **152** | 28.0% | 0.0193 |
| Graduate | **80** | 15.0% | 0.0154 | **55** | 10.5% | 0.0134 | **80** | 14.9% | 0.0154 | **68** | 12.4% | 0.0141 | **63** | 11.6% | 0.0138 |
| Vocational | **3** | 0.6% | 0.0032 | **49** | 9.4% | 0.0128 | **14** | 2.6% | 0.0069 | **45** | 8.2% | 0.0118 | **8** | 1.5% | 0.0052 |
| **Area** | | | | | | | | | | | | | | | |
| Rural | **453** | 84.7% | 0.0156 | **496** | 94.7% | 0.0098 | **456** | 84.8% | 0.0155 | **468** | 84.6% | 0.0154 | **503** | 92.6% | 0.0112 |
| Urban | **82** | 15.3% | 0.0156 | **28** | 5.3% | 0.0098 | **82** | 15.2% | 0.0155 | **85** | 15.4% | 0.0154 | **40** | 7.4% | 0.0112 |

Prop = proportion, SE = standard error

Table 11b: Distribution of respondents by district, gender, age group, main activity, marital status, education and area, KMHS 2015

| | **Srinagar** (N= 554 ) | | | **Anantnag** (N=550) | | | **Badgam** (N=538) | | | **Baramulla** (N=543) | | | **Pulwama** (N=550) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **n** | **Prop** | **Se** | **n** | **Prop** | **Se** | **n** | **Prop** | **Se** | **n** | **Prop** | **Se** | **n** | **Prop** | **Se** |
| **Sex** | | | | | | | | | | | | | | | |
| Female | 174 | 68.6% | 0.0197 | 353 | 64.2% | 0.0205 | 337 | 62.6% | 0.0209 | 358 | 65.9% | 0.0204 | 356 | 64.7% | 0.0204 |
| Male | 380 | 31.4% | 0.0197 | 197 | 35.8% | 0.0205 | 201 | 37.4% | 0.0209 | 185 | 34.1% | 0.0204 | 194 | 35.3% | 0.0204 |
| **Mean age** | 39.8 | | 0.6451 | 38.6 | | 0.6695 | 38 | | | 38.1 | | 0.6750 | 39.2 | | 0.6681 |
| **Age group** | | | | | | | | | | | | | | | |
| 18-34 years | 227 | 41.0% | 0.0209 | 254 | 46.2% | 0.0213 | 235 | 43.7% | 0.0214 | 243 | 44.8% | 0.0214 | 238 | 43.3% | 0.0211 |
| 35-55 years | 202 | 36.5% | 0.0205 | 183 | 33.3% | 0.0201 | 207 | 38.5% | 0.0210 | 204 | 37.6% | 0.0208 | 195 | 35.5% | 0.0204 |
| 55+ years | 125 | 22.6% | 0.0178 | 113 | 20.5% | 0.0172 | 96 | 17.8% | 0.0165 | 96 | 17.7% | 0.0164 | 117 | 21.3% | 0.0175 |
| **Main activity** | | | | | | | | | | | | | | | |
| Some employment | 82 | 14.8% | 0.0151 | 80 | 14.5% | 0.0150 | 100 | 18.6% | 0.0168 | 75 | 13.8% | 0.0148 | 88 | 16.0% | 0.0156 |
| Family business | 28 | 5.1% | 0.0093 | 53 | 9.6% | 0.0126 | 42 | 7.8% | 0.0116 | 44 | 8.1% | 0.0117 | 46 | 8.4% | 0.0118 |
| Student | 82 | 14.8% | 0.0151 | 66 | 12.0% | 0.0139 | 65 | 12.1% | 0.0141 | 62 | 11.4% | 0.0137 | 81 | 14.7% | 0.0151 |
| Unemployed/retired | 61 | 11.0% | 0.0133 | 47 | 8.5% | 0.0119 | 30 | 5.6% | 0.0099 | 27 | 5.0% | 0.0094 | 46 | 8.4% | 0.0118 |
| Home duties | 300 | 54.2% | 0.0212 | 304 | 55.3% | 0.0212 | 301 | 55.9% | 0.0214 | 334 | 61.6% | 0.0209 | 289 | 52.5% | 0.0213 |
| **Marital status** | | | | | | | | | | | | | | | |
| Never married | 148 | 26.9% | 0.0189 | 153 | 27.8% | 0.0191 | 144 | 26.8% | 0.0191 | 140 | 25.8% | 0.0188 | 148 | 26.9% | 0.0189 |
| Married | 379 | 68.8% | 0.0198 | 352 | 64.0% | 0.0205 | 363 | 67.6% | 0.0202 | 382 | 70.3% | 0.0196 | 372 | 67.6% | 0.0200 |
| Widowed/divorced/separated | 24 | 4.4% | 0.0087 | 45 | 8.2% | 0.0117 | 30 | 5.6% | 0.0099 | 21 | 3.9% | 0.0083 | 30 | 5.5% | 0.0097 |
| **Education** | | | | | | | | | | | | | | | |
| None | 108 | 20.0% | 0.0172 | 213 | 38.7% | 0.0208 | 235 | 43.8% | 0.0214 | 188 | 34.7% | 0.0205 | 172 | 31.4% | 0.0199 |
| Primary | 75 | 13.9% | 0.0149 | 65 | 11.8% | 0.0138 | 62 | 11.5% | 0.0138 | 81 | 14.9% | 0.0153 | 78 | 14.3% | 0.0150 |
| High | 172 | 31.8% | 0.0200 | 182 | 33.1% | 0.0201 | 154 | 28.7% | 0.0195 | 175 | 32.3% | 0.0201 | 187 | 34.2% | 0.0203 |
| Graduate | 146 | 27.0% | 0.0191 | 78 | 14.2% | 0.0149 | 55 | 10.2% | 0.0131 | 63 | 11.6% | 0.0138 | 99 | 18.1% | 0.0165 |
| Vocational | 40 | 7.4% | 0.0113 | 12 | 2.2% | 0.0062 | 31 | 5.8% | 0.0101 | 35 | 6.5% | 0.0106 | 11 | 2.0% | 0.0060 |
| **Area** | | | | | | | | | | | | | | | |
| Rural | 6 | 1.1% | 0.0044 | 435 | 79.1% | 0.0174 | 488 | 90.7% | 0.0125 | 432 | 79.6% | 0.0173 | 479 | 87.1% | 0.0143 |
| Urban | 548 | 98.9% | 0.0044 | 115 | 20.9% | 0.0174 | 50 | 9.3% | 0.0125 | 111 | 20.4% | 0.0173 | 71 | 12.9% | 0.0143 |

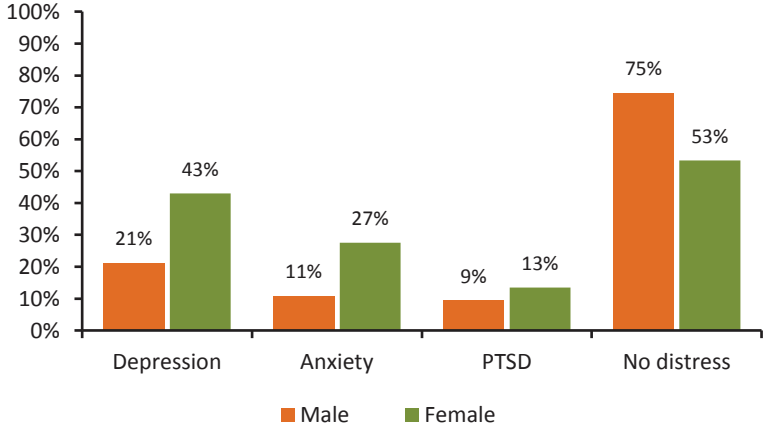
Prop = proportion, SE = standard error

## Srinagar

The proportion of the population in Srinagar suffering from symptoms of probable depression in 2015 was 28%, representing 230,000 adults. The proportion showing signs of a probable anxiety disorder was 16%, representing 132,000 adults, and the proportion with symptoms of probable PTSD was 11%, representing 88,000 adults. In Srinagar, 5.3% of adults met the diagnostic criteria for severe depression, representing 44,300 individuals, and 4.2% of adults met all the diagnostic criteria for PTSD, representing 34,600 individuals.

A significantly higher proportion of women (46%) were classified with a probable mental disorder compared to men (26%).

**Figure 1: Weighted prevalence of adults in Srinagar with mental distress, by sex,[1] KMHS 2015**




[1]. Anxiety (X2 = 23.4, p<0.001), depression (X2: 27.2, p=0.001), PTSD (X2: 1.94, p=0.2872).

**Figure 2: Weighted prevalence of adults in Srinagar with mental distress, by age group,[2] KMHS 2015**

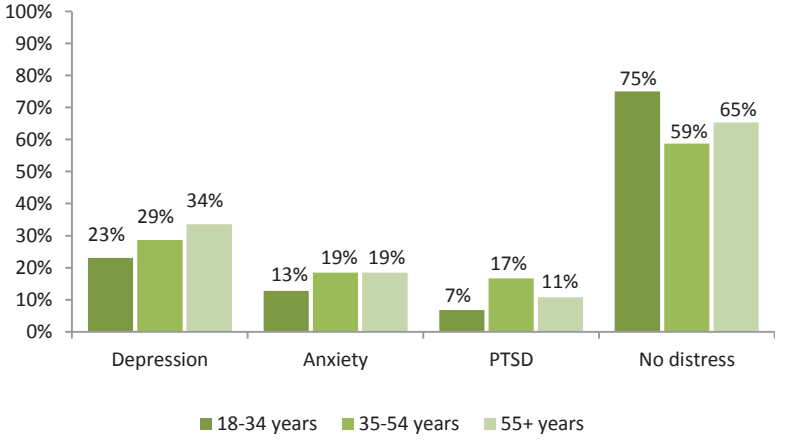
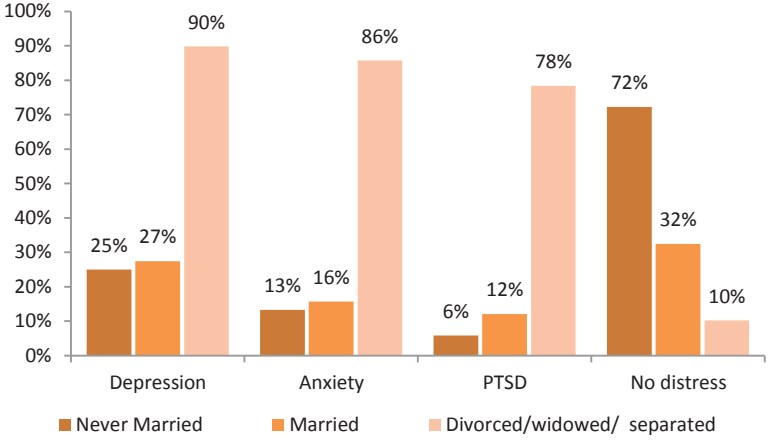



**Figure 3: Weighted prevalence of adults in Srinagar with mental distress, by marital status,[3] KMHS 2015**




[2]. No significant difference in age groups

[3]. Anxiety (X2 = 20.2, p<0.001), depression (X2: 13.3, p=0.012), PTSD (X2: 17.7, p=0.005).

**Figure 4: Weighted prevalence of adults in Srinagar with mental distress, by education,[4] KMHS 2015**

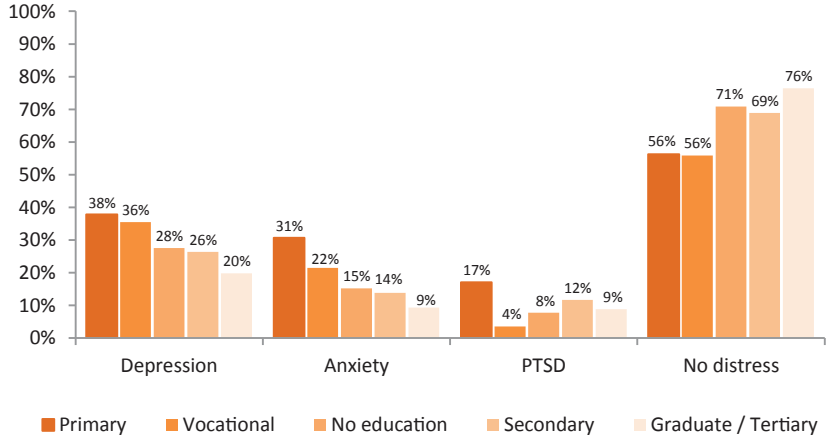
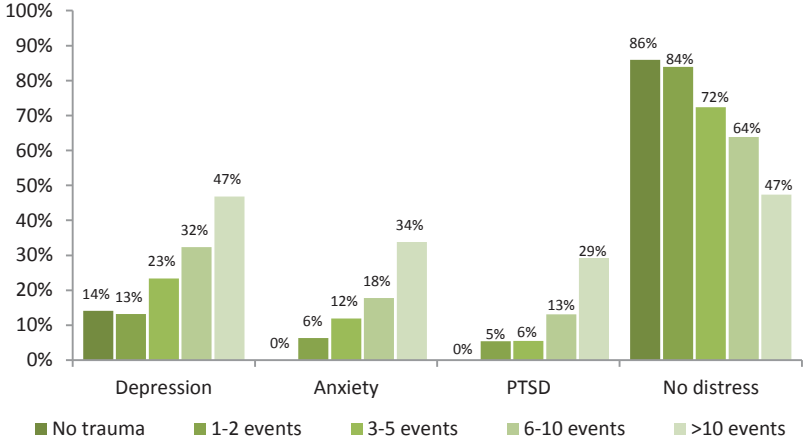


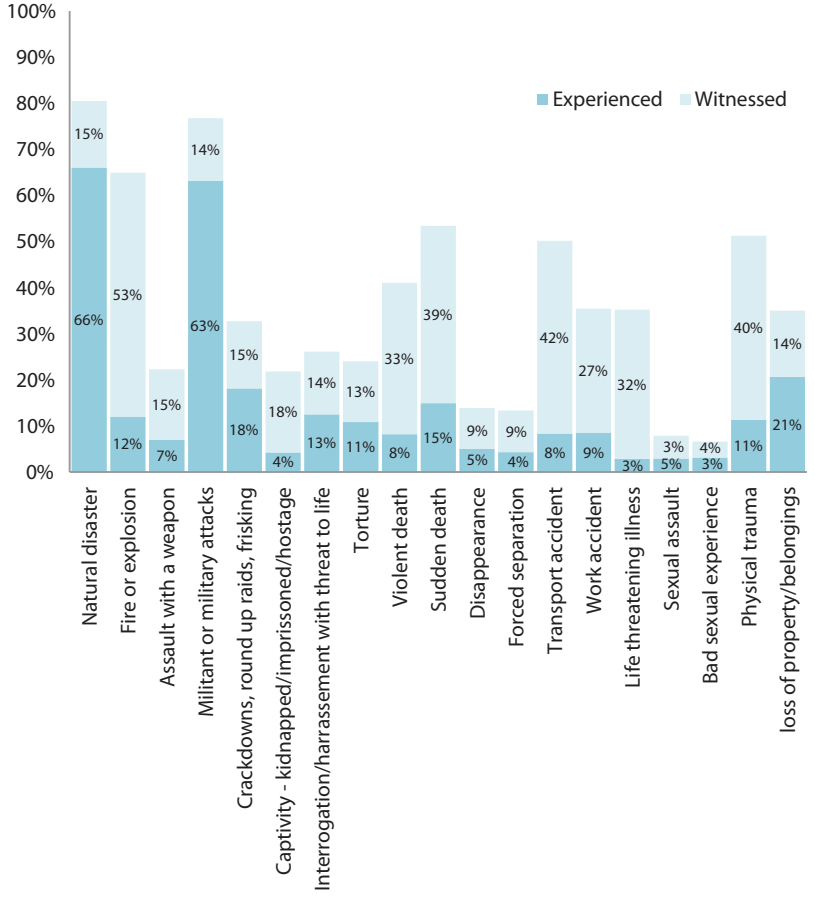

**Figure 5: Weighted prevalence of adults in Srinagar with mental distress, by number of traumatic events witnessed or experienced,[5] KMHS 2015**




[4]. Anxiety (X2 = 24.6, p=0.012), depression (X2: 16.8, p=0.078), PTSD (X2: 5.04, p=0.519).

[5]. Anxiety (X2 = 23.9, p=0.005), depression (X2: 21.4, p=0.032), PTSD (X2: 41.2, p<0.001).

**Figure 6: Weighted prevalence of traumatic events experienced or witnessed by adults in Srinagar, KMHS 2015**

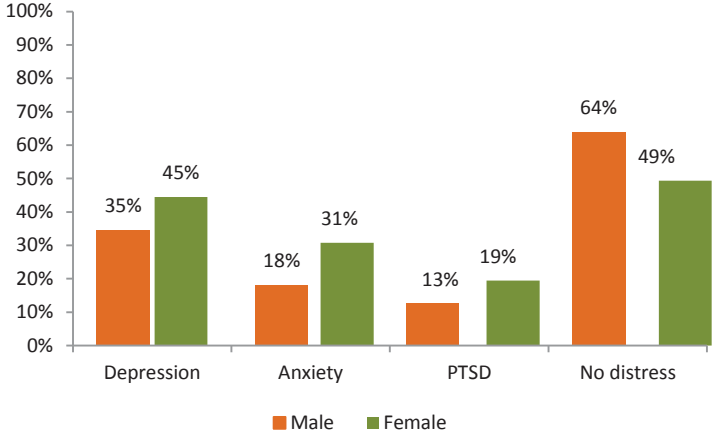


## Ganderbal

The proportion of the population in Ganderbal suffering from symptoms of probable depression in 2015 was 38%, representing 63,000 adults. The proportion showing signs of a probable anxiety disorder was 22%, representing 37,000 adults, and the proportion with symptoms of probable PTSD was 15%, representing 25,000 adults. In Ganderbal, 89% of adults met the diagnostic criteria for severe depression, representing 15,000 individuals, and 4% of adults met all the diagnostic criteria for PTSD, representing 7,000 individuals.

A significantly higher proportion of women (51%) were classified with a probable mental disorder compared to men (36%).

**Figure 1: Weighted prevalence of adults in Ganderbal with mental distress, by sex,[6] KMHS 2015**




[6]. Anxiety (X2 = 10.7, p=0.014), depression (X2: 4.77, p=0.084), PTSD (X2: 4.25, p=0.090).

**Figure 2: Weighted prevalence of adults in Ganderbal with mental distress, by age group,[7] KMHS 2015**

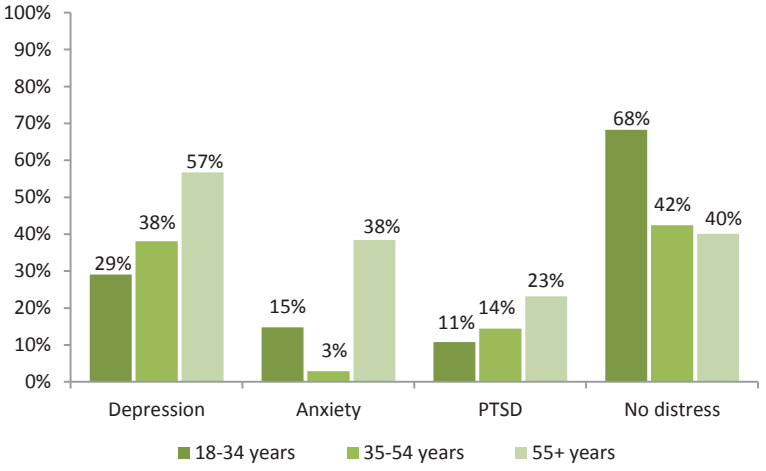
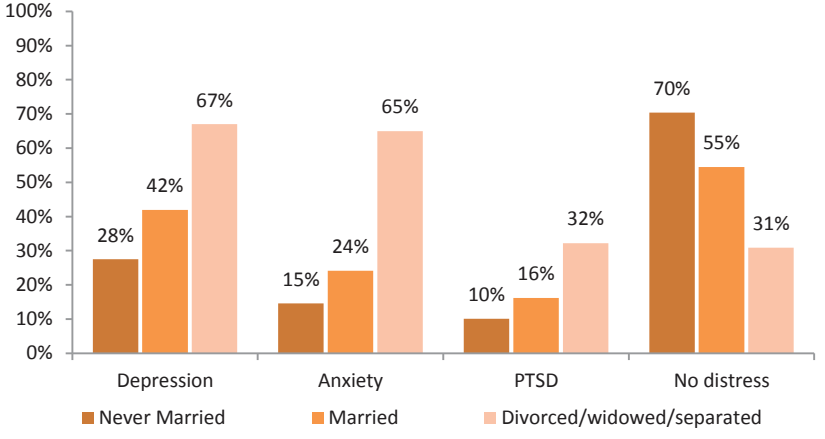



**Figure 3: Weighted prevalence of adults in Ganderbal with mental distress, by marital status,[8] KMHS 2015**




[7]. Anxiety (X2: 21.0, p=0.002), depression (X2: 23.9, p=0.002), PTSD (X2: 9.20, p=0.061).

[8]. Anxiety (X2 = 20.5, p=0.007), depression (X2: 16.3, p=0.012), PTSD (X2: 7.8, p=0.08).

**Figure 4: Weighted prevalence of adults in Ganderbal with mental distress, by education,[9] KMHS 2015**

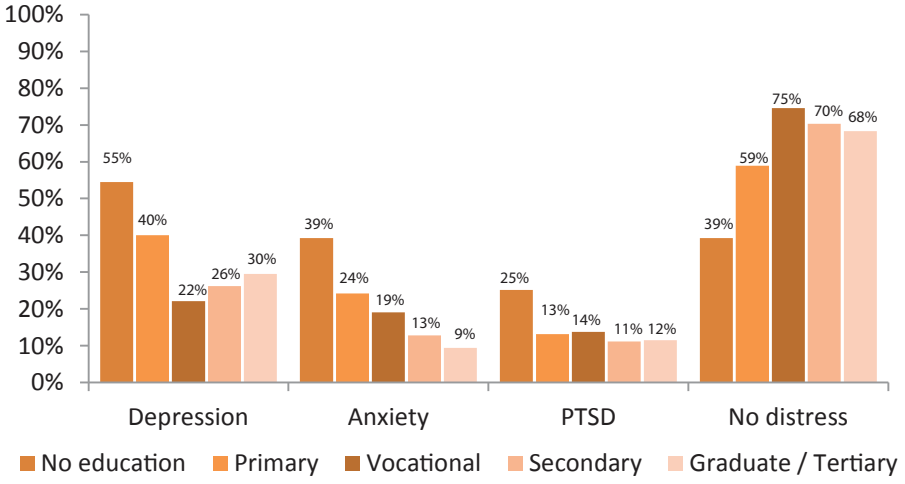
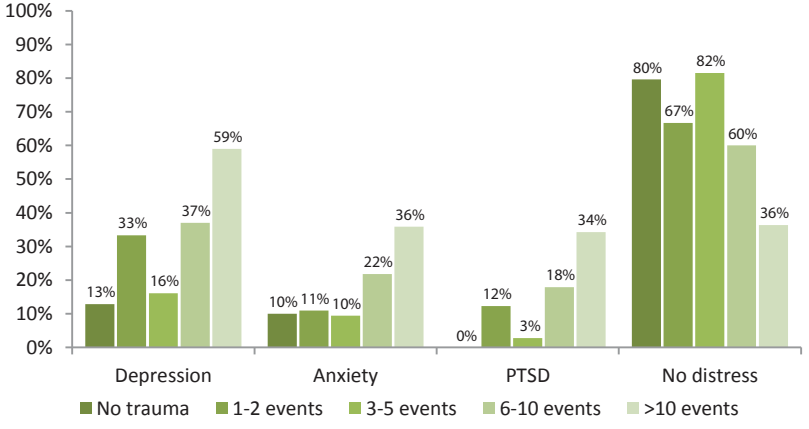


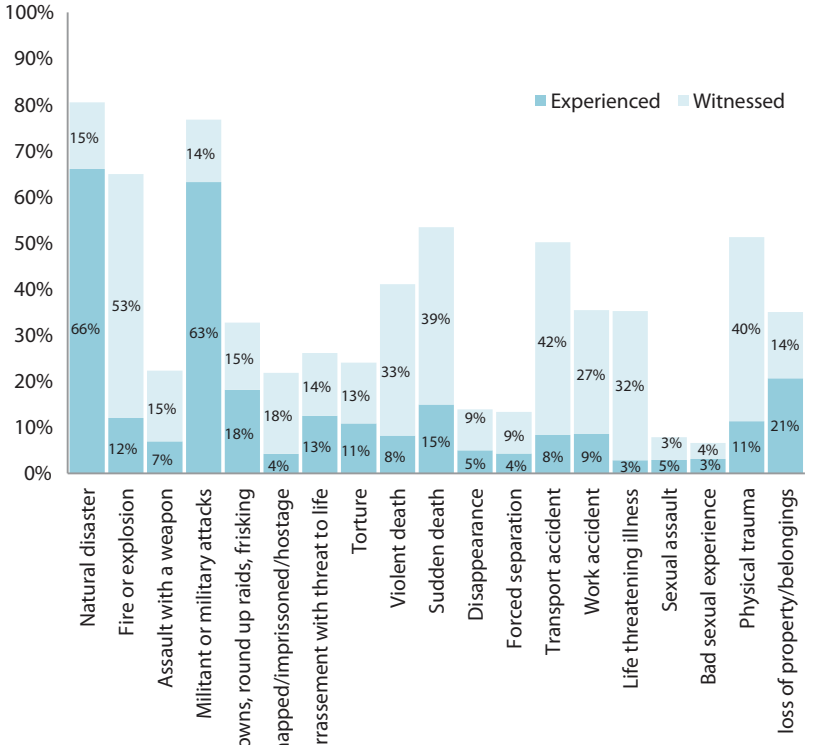

**Figure 5: Weighted prevalence of adults in Ganderbal with mental distress, by number of traumatic events witnessed or experienced,[10] KMHS 2015**




[9]. Anxiety (X2 = 53.0, p<0.001), depression (X2: 36.2, p=0.002), PTSD (X2: 16.5, p=0.017).

[10]. Anxiety (X2 = 12.2, p=0001), depression (X2: 26.7, p=0.003), PTSD (X2: 44.4, p<0.001).

**Figure 6: Weighted prevalence of traumatic events experienced or witnessed by adults in Ganderbal, KMHS 2015**

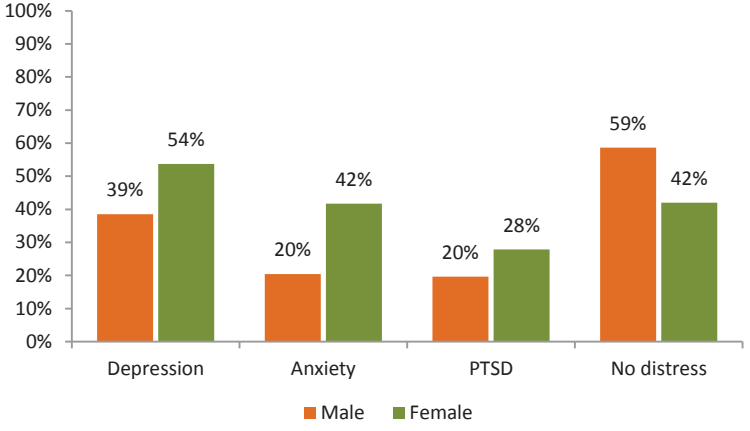


## Shopiyan

The proportion of the population in Shopiyan suffering from symptoms of probable depression in 2015 was 43%, representing 68,000 adults. The proportion showing signs of a probable anxiety disorder was 27%, representing 42,000 adults, and the proportion with symptoms of probable PTSD was 22%, representing 35,000 adults. In Shopiyan, 12% of adults met the diagnostic criteria for severe depression, representing 19,000 individuals, and 7% of adults met all the diagnostic criteria for PTSD, representing 12,000 individuals.

A significantly higher proportion of women (51%) were classified with a probable mental disorder compared to men (36%).

**Figure 1: Weighted prevalence of adults in Shopiyan with mental distress, by sex,[11] KMHS 2015**




[11]. Anxiety (X2 = 26.9, p<0.001), depression (X2: 11.1, p=0.010), PTSD (X2: 4.69, p=0.050).

**Figure 2: Weighted prevalence of adults in Shopiyan with mental distress, by age group,[12] KMHS 2015**

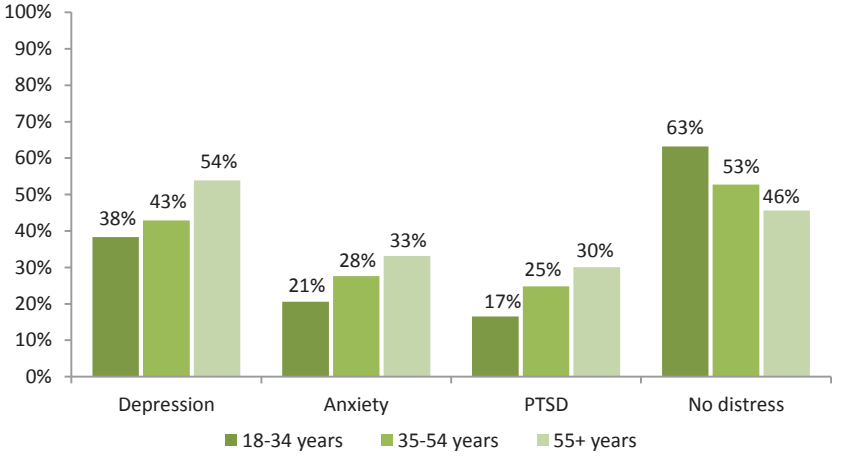
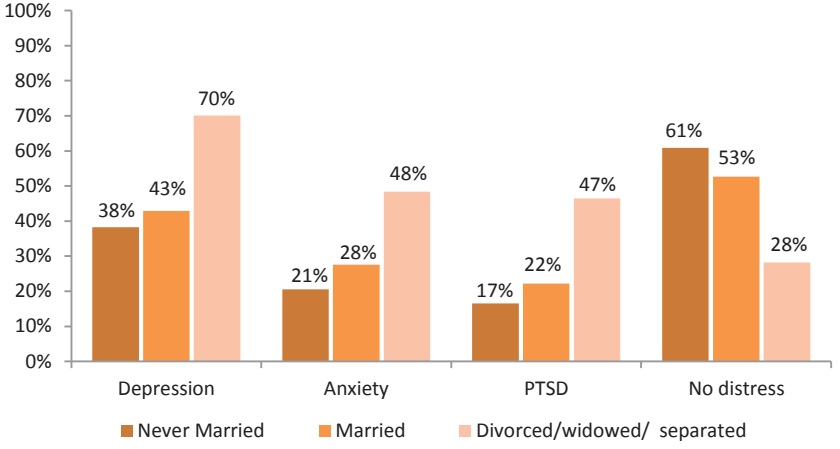



**Figure 3: Weighted prevalence of adults in Shopiyan with mental distress, by marital status,[13] KMHS 2015**




[12]. Anxiety (X2: 9.8, p=0.056), depression (X2: 10.9, p=0.069), PTSD (X2: 12.7, p=0.026).

[13]. Anxiety (X2 = 9.5, p=0.042), depression (X2: 10.6, p=0.080), PTSD (X2: 12.6, p=0.029).

**Figure 4: Weighted prevalence of adults in Shopiyan with mental distress, by education,[14] KMHS 2015**

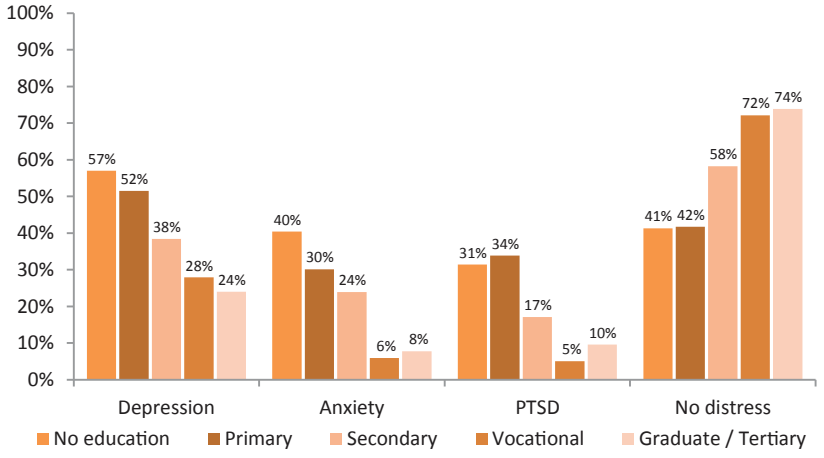
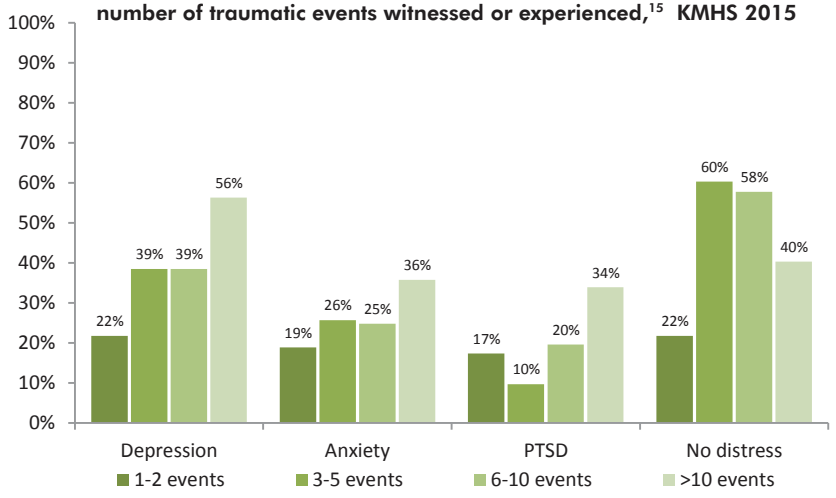


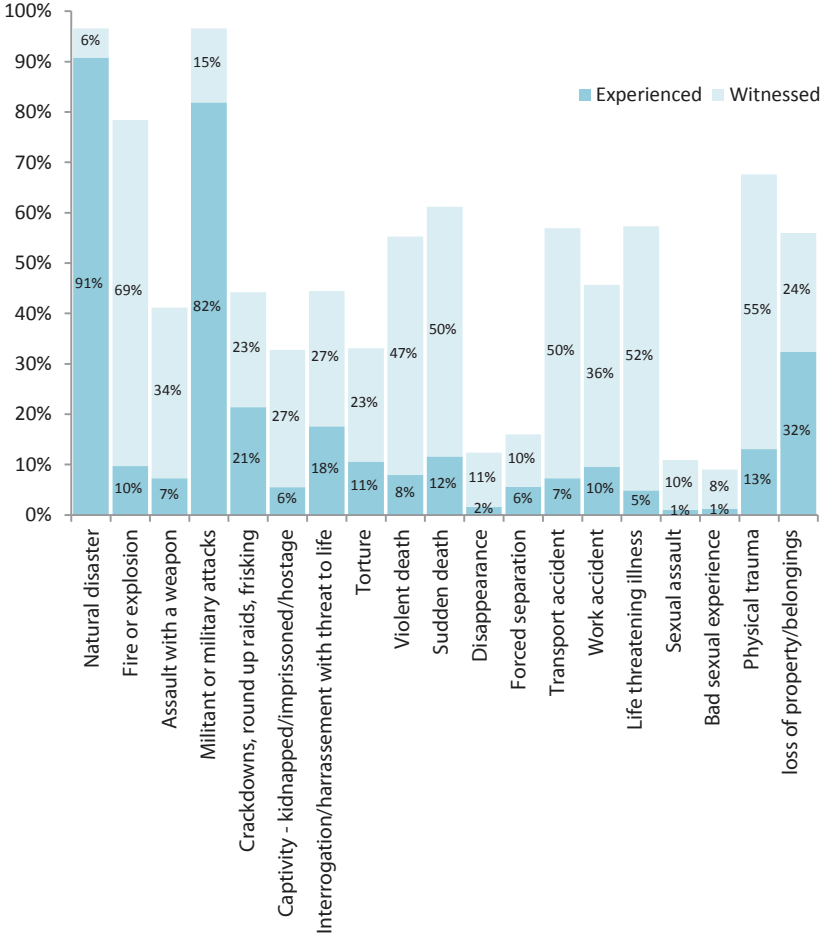

**Figure 5: Weighted prevalence of adults in Shopiyan with mental distress, by number of traumatic events witnessed or experienced,[15] KMHS 2015**




[14]. Anxiety (X2 = 49.1, p<0.001), depression (X2: 42.2, p<0.001), PTSD (X2: 30.2, p=0.002).

[15]. Anxiety (X2 = 2.0, p=695), depression (X2: 13.1, p=0.03), PTSD (X2: 18.9, p<0.02).

**Figure 6: Weighted prevalence of traumatic events experienced or witnessed by adults in Shopiyan, KMHS 2015**

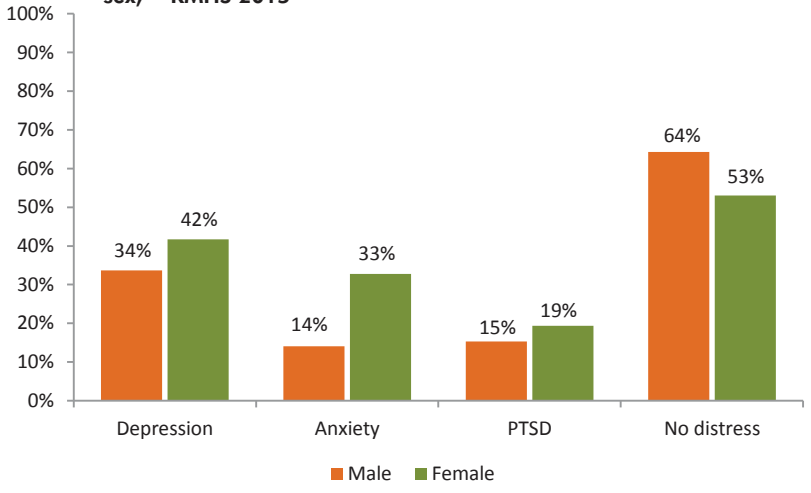


## Pulwama

The proportion of the population in Pulwama suffering from symptoms of probable depression in 2015 was 36%, representing 125,000 adults. The proportion showing signs of a probable anxiety disorder was 20%, representing 70,000 adults, and the proportion with symptoms of probable PTSD was 17%, representing 57,000 adults. In Pulwama, 9% of adults met the diagnostic criteria for severe depression, representing 32,000 individuals, and 5% of adults met all the diagnostic criteria for PTSD, representing 16,000 individuals.

A significantly higher proportion of women (47%) were classified with a probable mental disorder compared to men (36%).

**Figure 1: Weighted prevalence of adults in Pulwama with mental distress, by sex,[16] KMHS 2015**




[16]. Anxiety (X2 = 26.5, p<0.001), depression (X2: 3.3, p=0.107), PTSD (X2: 1.6, p=0.253).

**Figure 2: Weighted prevalence of adults in Pulwama with mental distress, by age group,[17] KMHS 2015**

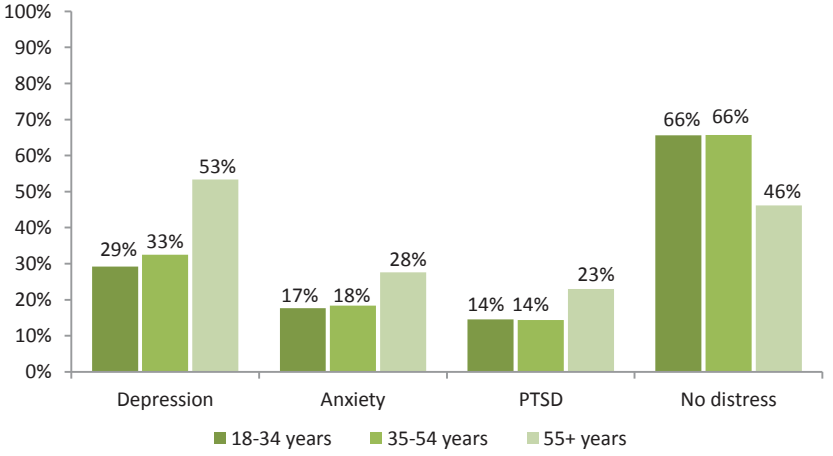
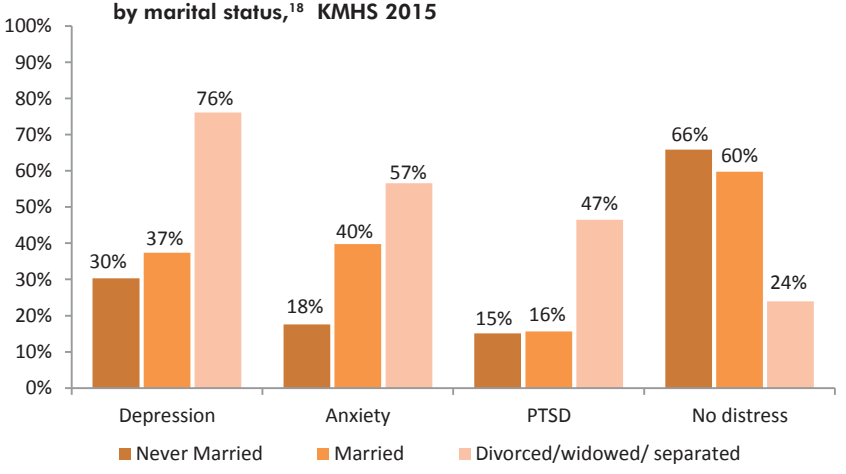



**Figure 3: Weighted prevalence of adults in Pulwama with mental distress, by marital status,[18] KMHS 2015**




[17]. Anxiety (X2: 1.7, p=0.532), depression (X2: 18.2, p=0.011), PTSD (X2: 3.3, p=0.369).

[18]. Anxiety (X2 = 11.5, p=0.053), depression (X2: 16.2, p=0.010), PTSD (X2: 14.4, p=0.009).

**Figure 4: Weighted prevalence of adults in Pulwama with mental distress, by education,[19] KMHS 2015**

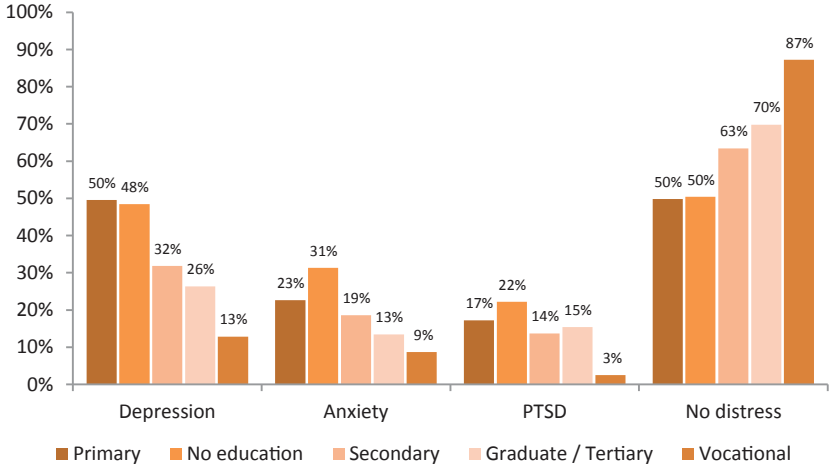
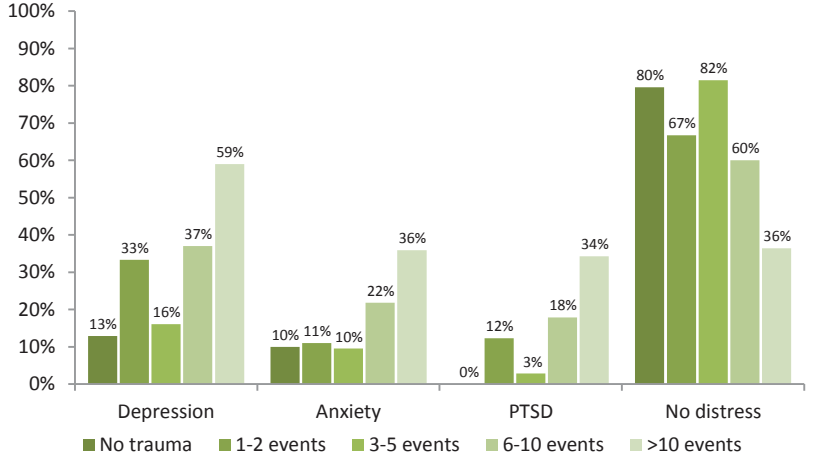


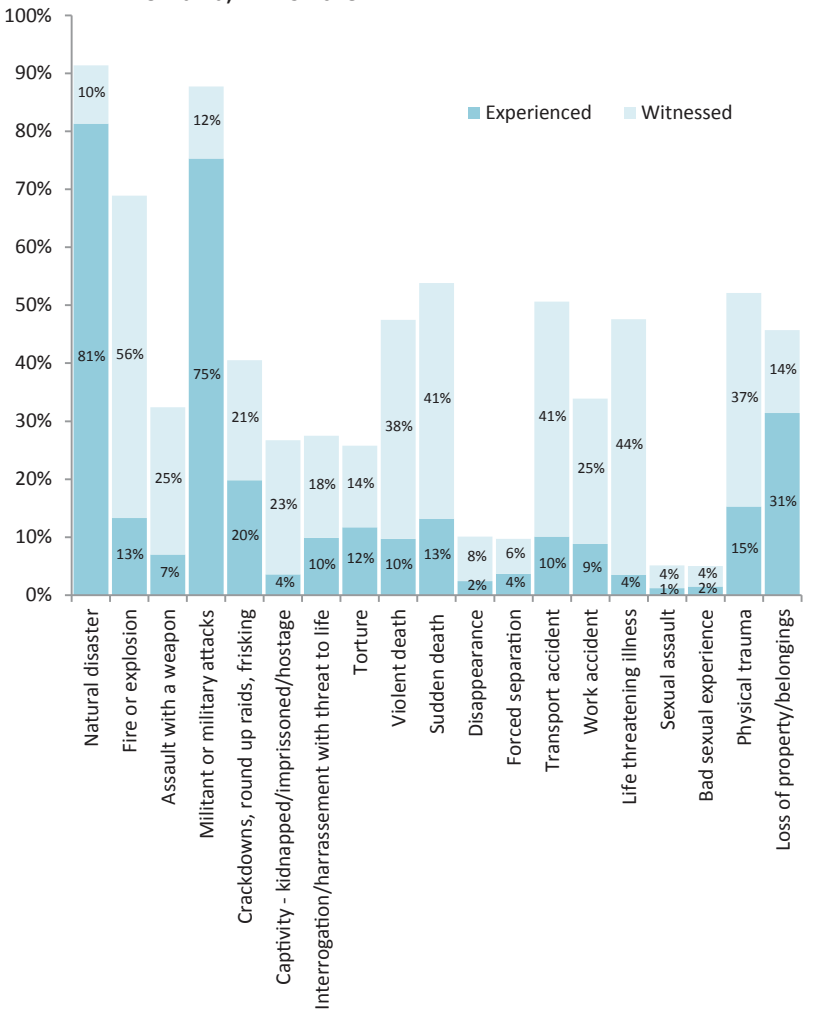

**Figure 5: Weighted prevalence of adults in Pulwama with mental distress, by number of traumatic events witnessed or experienced,[20] KMHS 2015**




[19]. Anxiety (X2 = 18.0, p=0.015), depression (X2: 21.5, p=0.013), PTSD (X2: 6.8, p=0.337).

[20]. Anxiety (X2 = 17.2, p=0.022), depression (X2: 49.2, p<0.001), PTSD (X2: 41.4, p<0.001).

**Figure 6: Weighted prevalence of traumatic events experienced or witnessed by adults in Pulwama, KMHS 2015**

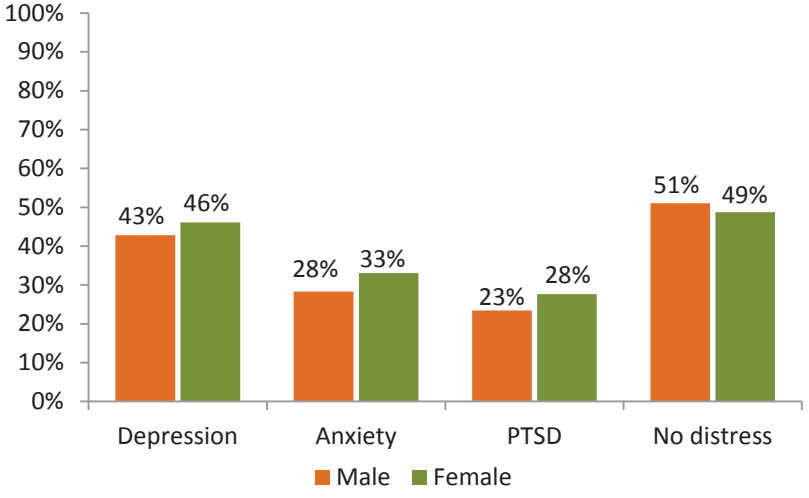


## Kulgam

The proportion of the population in Kulgam suffering from symptoms of probable depression in 2015 was 44%, representing 109,000 adults. The proportion showing signs of a probable anxiety disorder was 30%, representing 38,000 adults, and the proportion with symptoms of probable PTSD was 25%, representing 30,000 adults. In Kulgam, 12% of adults met the diagnostic criteria for severe depression, representing 29,000 individuals, and 7% of adults met all the diagnostic criteria for PTSD, representing 9,000 individuals.

The proportion of men and women women classified with aprobable mental disorder was similar, 51% and 49%, respectively.

**Figure 1: Weighted prevalence of adults in Kulgam with mental distress, by sex,[21] KMHS 2015**




[21]. Anxiety (X2 = 1.3, p=0.296), depression (X2: 0.5, p=0.521), PTSD (X2: 1.1, p=0.324).

**Figure 2: Weighted prevalence of adults in Kulgam with mental distress, by age group,[22] KMHS 2015**

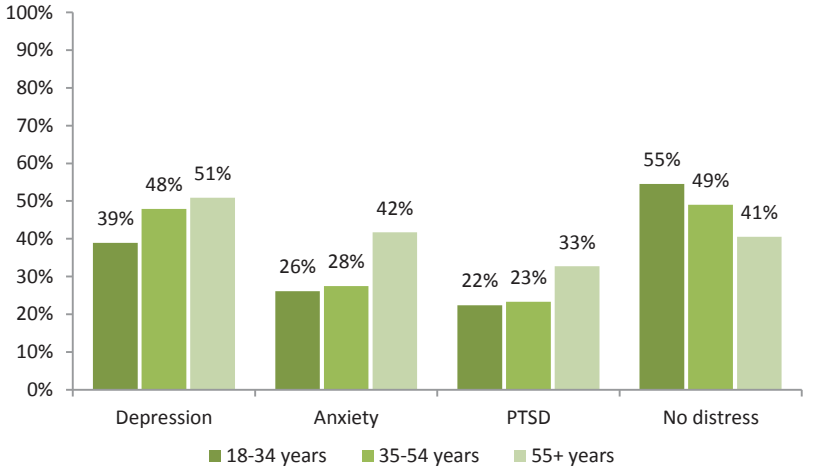
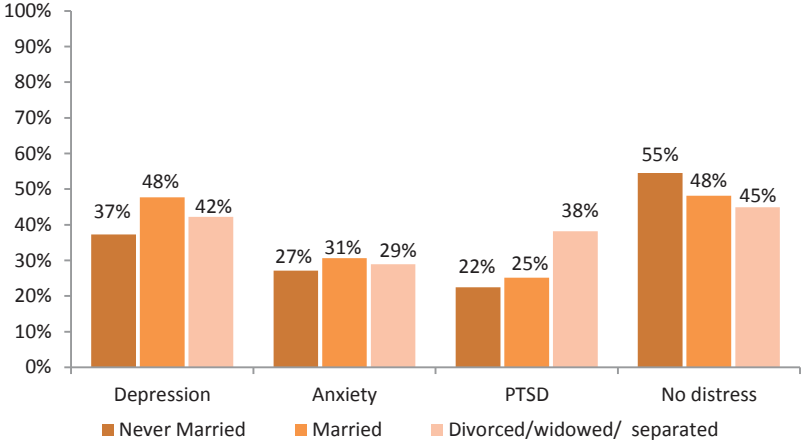



**Figure 3: Weighted prevalence of adults in Kulgam with mental distress, by marital status,[23] KMHS 2015**




[22]. Anxiety (X2: 7.8, p=0.105), depression (X2: 5.0, p=0.294), PTSD (X2: 3.3, p=0.387).

[23]. Anxiety (X2 = 2.6, p=0.467), depression (X2: 5.4, p=0.279), PTSD (X2: 3.5, p=0.426).

**Figure 4: Weighted prevalence of adults in Kulgam with mental distress, by education,[24] KMHS 2015**

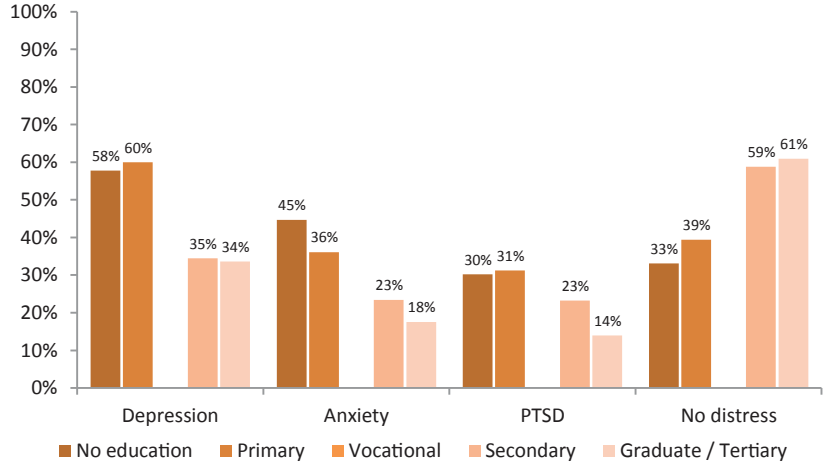
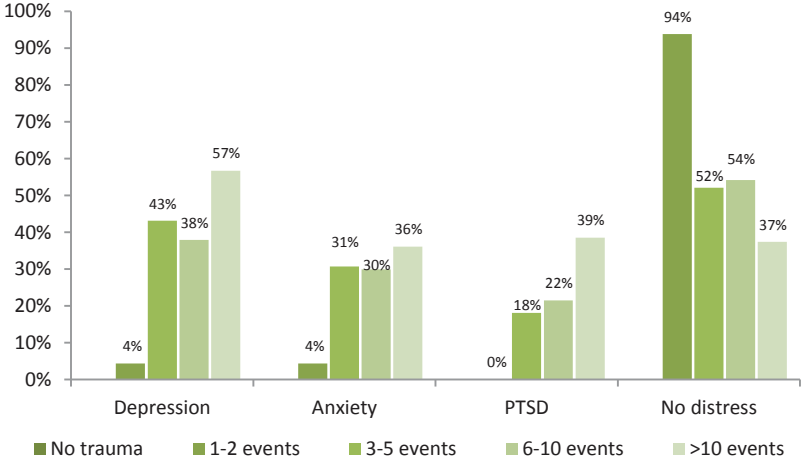


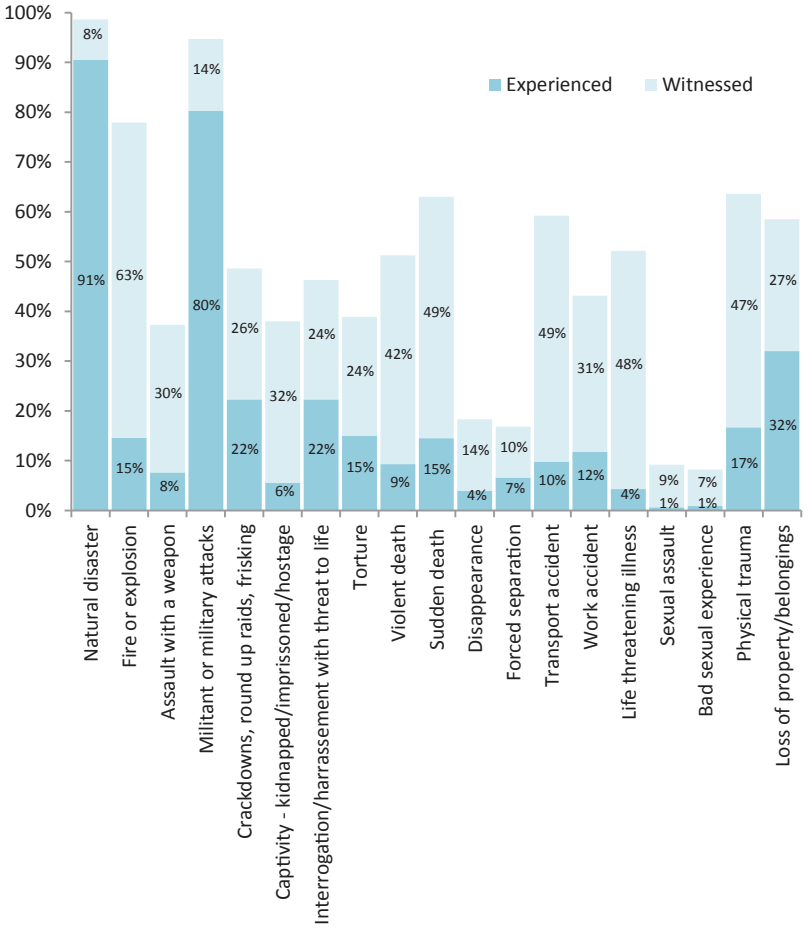

**Figure 5: Weighted prevalence of adults in Kulgam with mental distress, by number of traumatic events witnessed or experienced,[25] KMHS 2015**




[24]. Anxiety (X2 = 30.0, p=0.009), depression (X2: 33.8, p=0.012), PTSD (X2: 16.0, p=0.118).

[25]. Anxiety (X2 = 4.9, p=0.339), depression (X2: 21.9, p=0.011), PTSD (X2: 27.7, p=0.005).

**Figure 6: Weighted prevalence of traumatic events experienced or witnessed by adults in Kulgam, KMHS 2015**

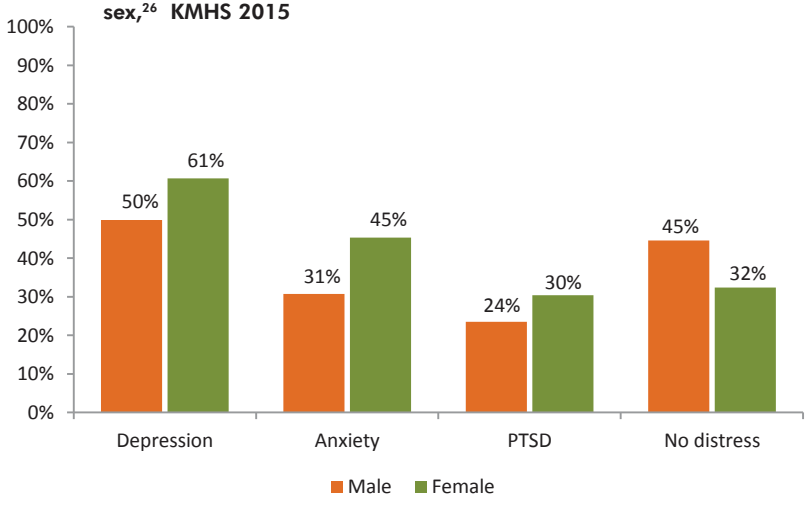


## Badgam

The proportion of the population in Badgam suffering from symptoms of probable depression in 2015 was 54%, representing 210 000 adults. The proportion showing signs of a probable anxiety disorder was 36%, representing 75,000 adults, and the proportion with symptoms of probable PTSD was 26%, representing 49 000 adults. In Badgam, 14% of adults met the diagnostic criteria for severe depression, representing 56,000 individuals, and 17% of adults met all the diagnostic criteria for PTSD, representing 34,000 individuals.

A significantly higher proportion of women (66%) were classified with a probable mental disorder compared to men (55%).

**Figure 1: Weighted prevalence of adults in Badgam with mental distress, by sex,[26] KMHS 2015**




[26]. Anxiety (X2 = 11.4, p=0.004), depression (X2: 5.8, p=0.045), PTSD (X2: 3.1, p=0.077).

**Figure 2: Weighted prevalence of adults in Badgam with mental distress, by age group,[27] KMHS 2015**

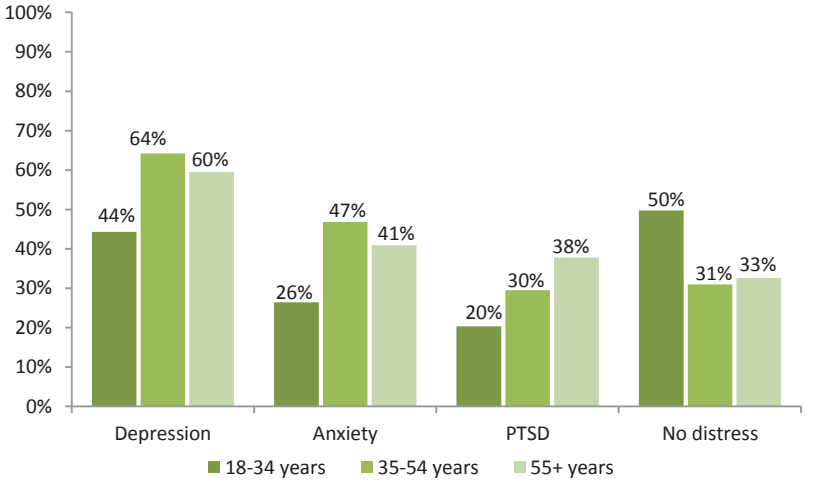
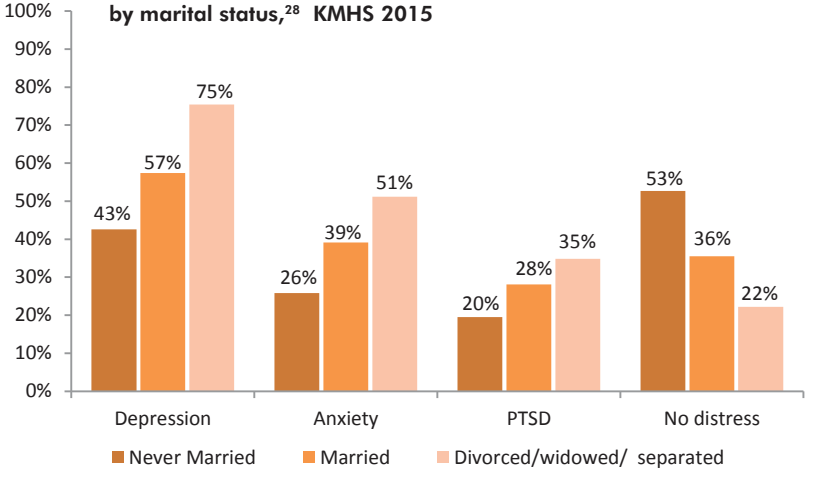



**Figure 3: Weighted prevalence of adults in Badgam with mental distress, by marital status,[28] KMHS 2015**




[27]. Anxiety (X2: 23.4, p<0.001), depression (X2: 19.7, p<0.001), PTSD (X2: 10.3, p=0.026).

[28]. Anxiety (X2 = 12.3, p=0.029), depression (X2: 15.8, p=0.002), PTSD (X2: 6.0, p=0.092).

**Figure 4: Weighted prevalence of adults in Badgam with mental distress, by education,[29] KMHS 2015**

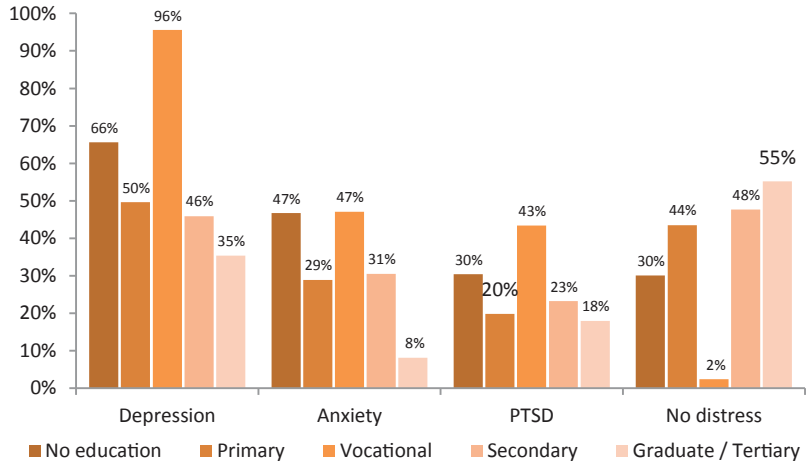
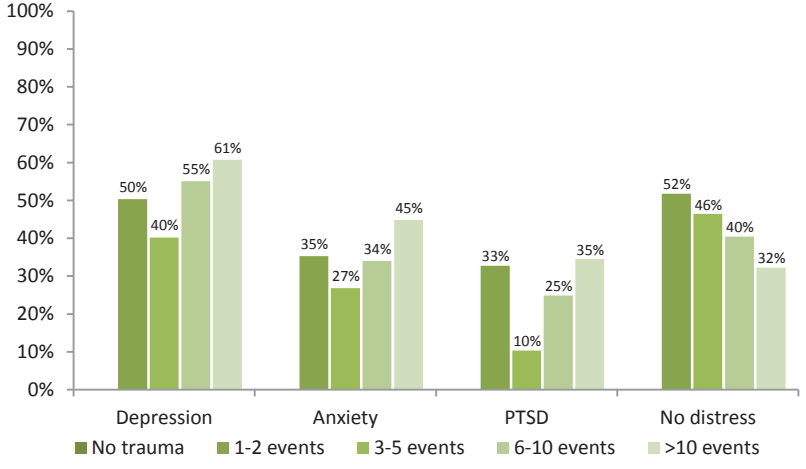


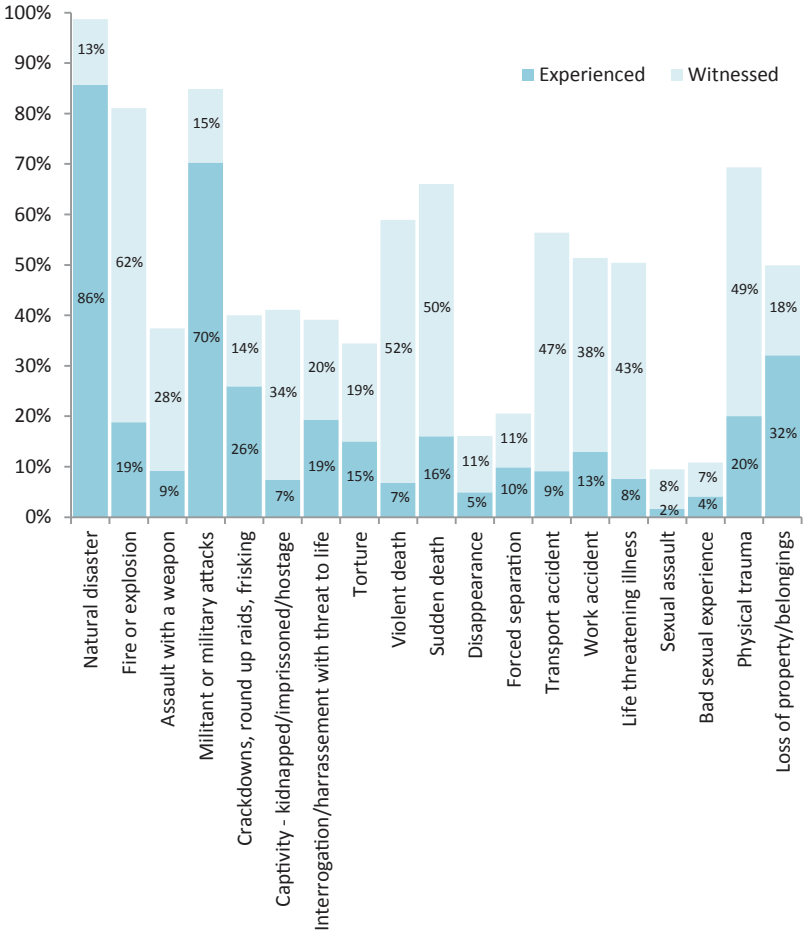

**Figure 5: Weighted prevalence of adults in Badgam with mental distress, by number of traumatic events witnessed or experienced,[30] KMHS 2015**




[29]. Anxiety (X2 = 50.7, p<0.001), depression (X2: 45.3, p<0.001), PTSD (X2: 17.1, p=0.044).

[30]. Anxiety (X2 = 5.6, p=0.286), depression (X2: 6.7, p=0.212), PTSD (X2: 11.7, p=0.026).

**Figure 6: Weighted prevalence of traumatic events experienced or witnessed by adults in Badgam, KMHS 2015**

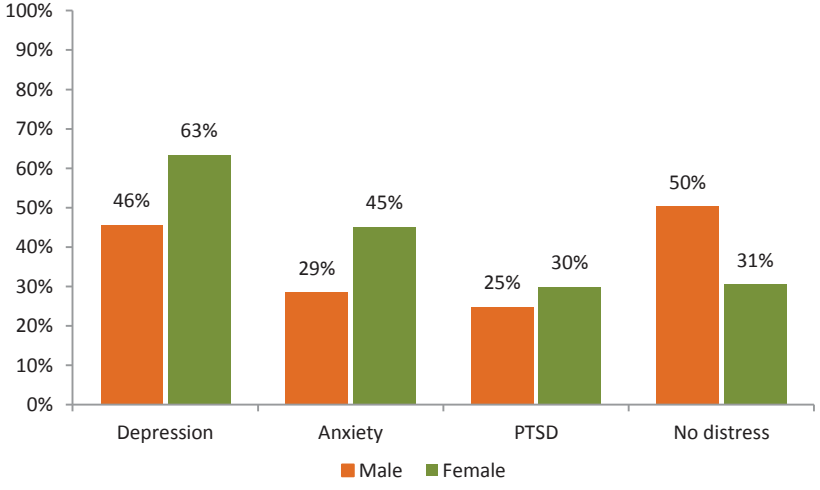


## Baramulla

The proportion of the population in Baramulla suffering from symptoms of probable depression in 2015 was 51%, representing 300 000 adults. The proportion showing signs of a probable anxiety disorder was 34%, representing 107,000 adults, and the proportion with symptoms of probable PTSD was 26%, representing 70 000 adults. In Baramulla, 15% of adults met the diagnostic criteria for severe depression, representing 88,000 individuals, and 15% of adults met all the diagnostic criteria for PTSD, representing 46,000 individuals.

A significantly higher proportion of women (69%) were classified with a probable mental disorder compared to men (50%).

**Figure 1: Weighted prevalence of adults in Baramulla with mental distress, by sex,[31] KMHS 2015**




[31]. Anxiety (X2 = 14.4, p=0.010), depression (X2: 14.7, p=0.012), PTSD (X2: 1.5, p=0.298).

**Figure 2: Weighted prevalence of adults in Baramulla with mental distress, by age group,[32] KMHS 2015**

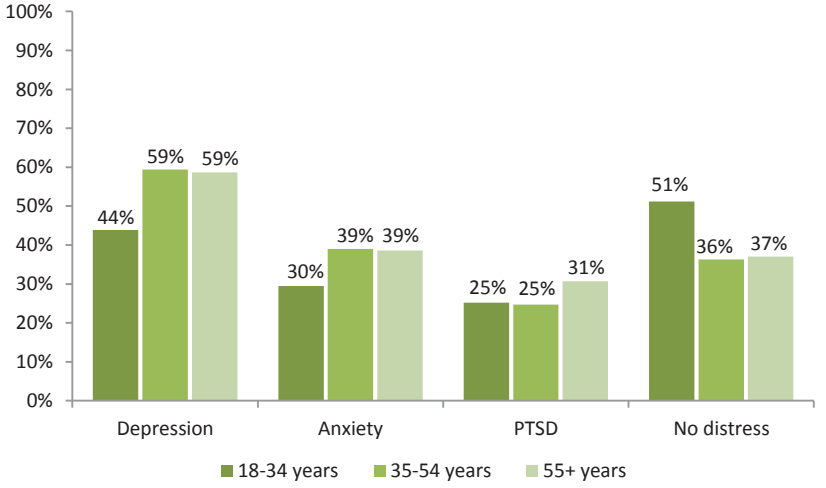
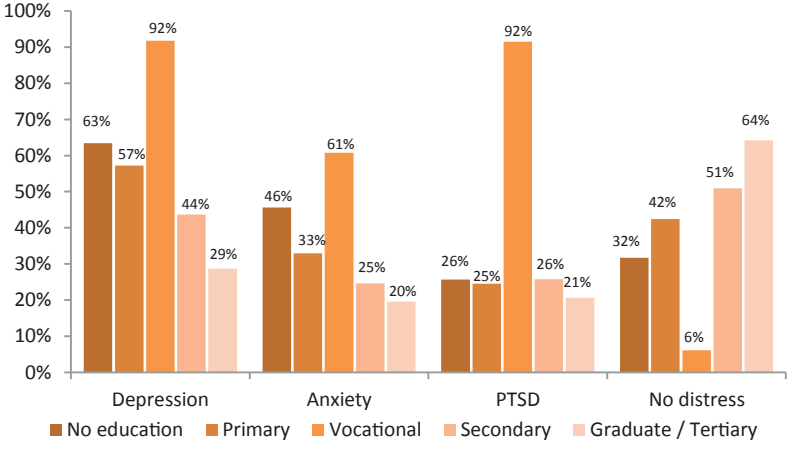



**Figure 3: Weighted prevalence of adults in Baramulla with mental distress, by marital status,[33] KMHS 2015**




[32]. Anxiety (X2: 5.1, p=0.231), depression (X2: 12.6, p=0.031), PTSD (X2: 1.0, p=0.707).

[33]. Anxiety (X2 = 17.2, p=0.034), depression (X2: 13.8, p=0.036), PTSD (X2: 3.2, p=0.400).

**Figure 4: Weighted prevalence of adults in Baramulla with mental distress, by education,[34] KMHS 2015**

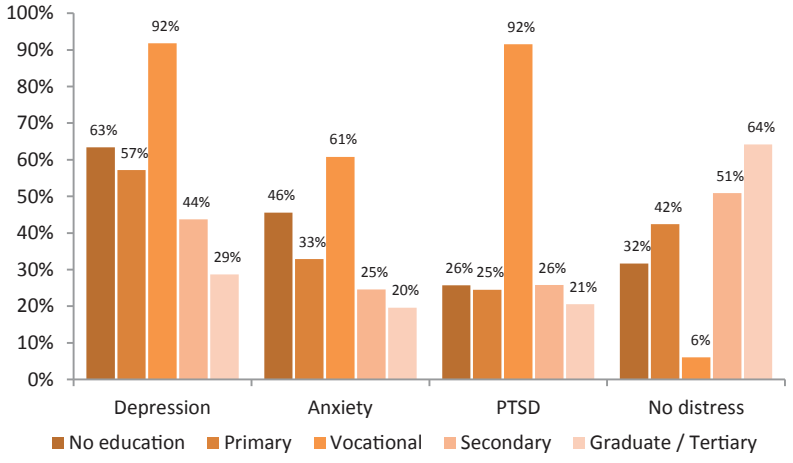
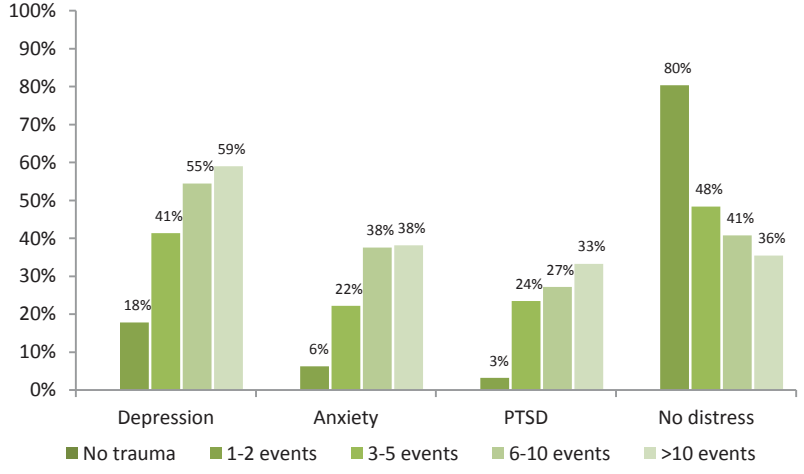


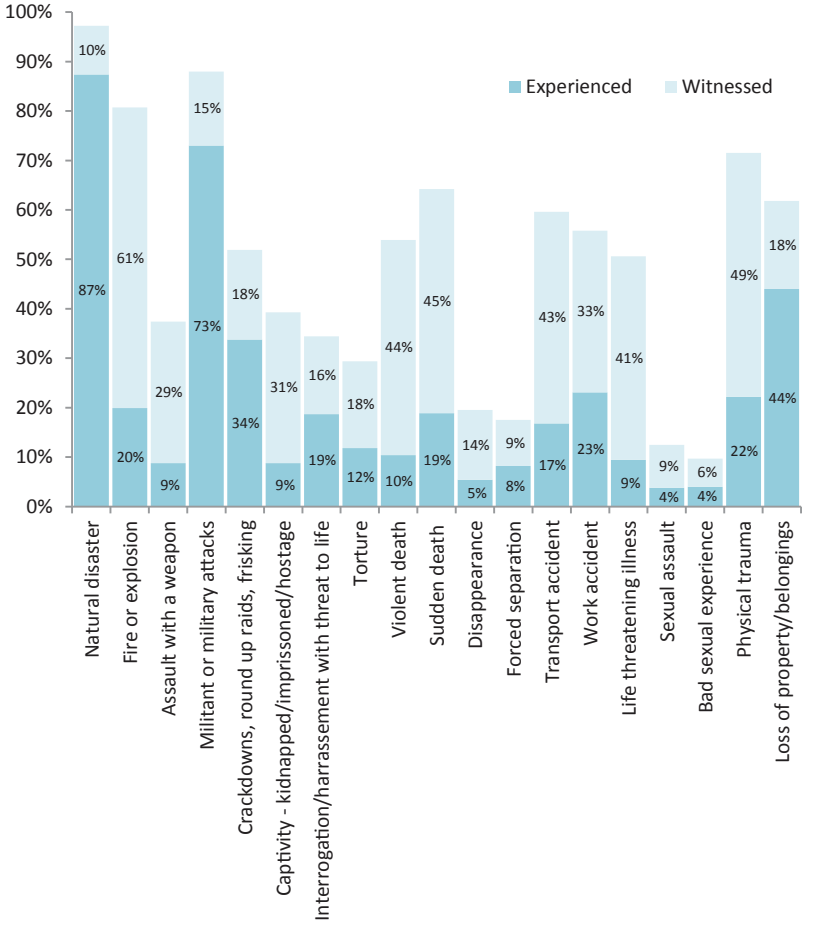

**Figure 5: Weighted prevalence of adults in Baramulla with mental distress, by number of traumatic events witnessed or experienced,[35] KMHS 2015**




[34]. Anxiety (X2 = 33.8, p=0.001), depression (X2: 44.3, p<0.001), PTSD (X2: 11.1, p=0.133).

[35]. Anxiety (X2 = 14.9, p=0.046), depression (X2: 21.8, p=0.035), PTSD (X2: 13.8, p=0.081).

**Figure 6: Weighted prevalence of traumatic events experienced or witnessed by adults in Baramulla, KMHS 2015**

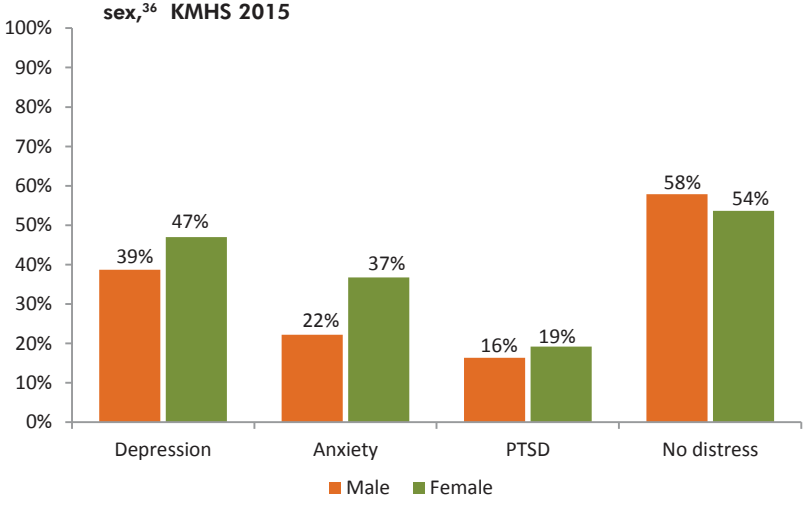


## Bandipora

The proportion of the population in Bandipora suffering from symptoms of probable depression in 2015 was 42%, representing 94 000 adults. The proportion showing signs of a probable anxiety disorder was 28%, representing 33 000 adults, and the proportion with symptoms of probable PTSD was 17%, representing 18 000 adults. In Bandipora, 11% of adults met the diagnostic criteria for severe depression, representing 24 000 individuals, and 10% of adults met all the diagnostic criteria for PTSD, representing 11 600 individuals.

A significantly higher proportion of women (54%) were classified with a probable mental disorder compared to men (42%).

**Figure 1: Weighted prevalence of adults in Bandipora with mental distress, by sex,[36] KMHS 2015**




[36]. Anxiety (X2 = 14.4, p=0.010), depression (X2: 14.7, p=0.012), PTSD (X2: 1.5, p=0.298).

**Figure 2: Weighted prevalence of adults in Bandipora with mental distress, by age group,[37] KMHS 2015**

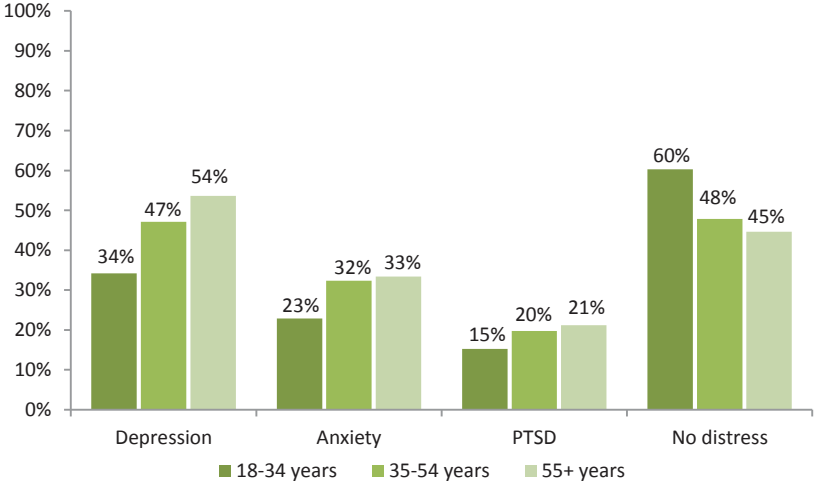
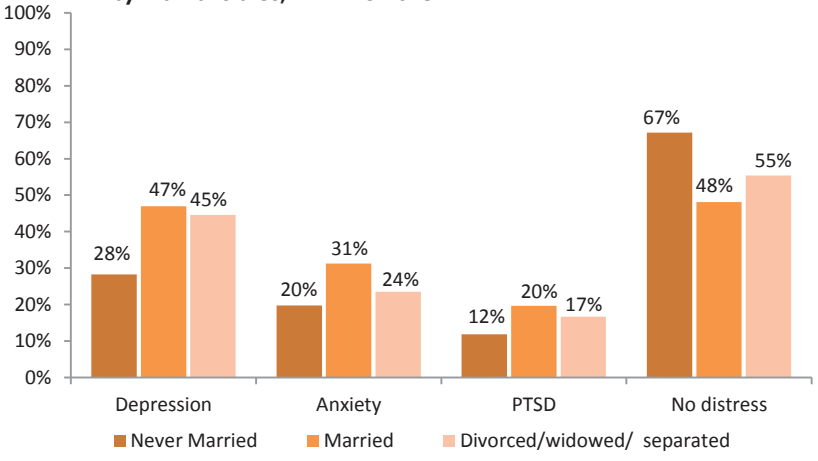



**Figure 3: Weighted prevalence of adults in Bandipora with mental distress, by marital status,[38] KMHS 2015**




[37]. Anxiety (X2: 4.4, p=0.170), depression (X2: 11.0, p=0.048), PTSD (X2: 1.7, p=496).

[38]. Anxiety (X2 = 8.6, p=0.016), depression (X2: 20.6, p=0.002), PTSD (X2: 7.6, p=0.075).

**Figure 4: Weighted prevalence of adults in Bandipora with mental distress, by education,[39] KMHS 2015**

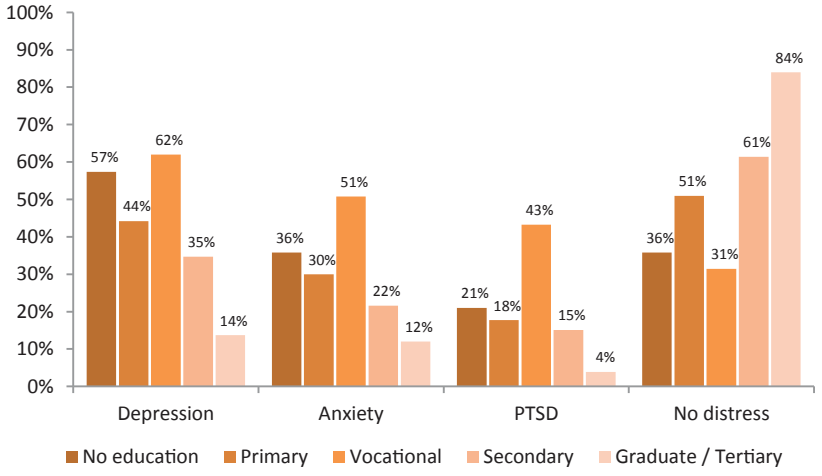
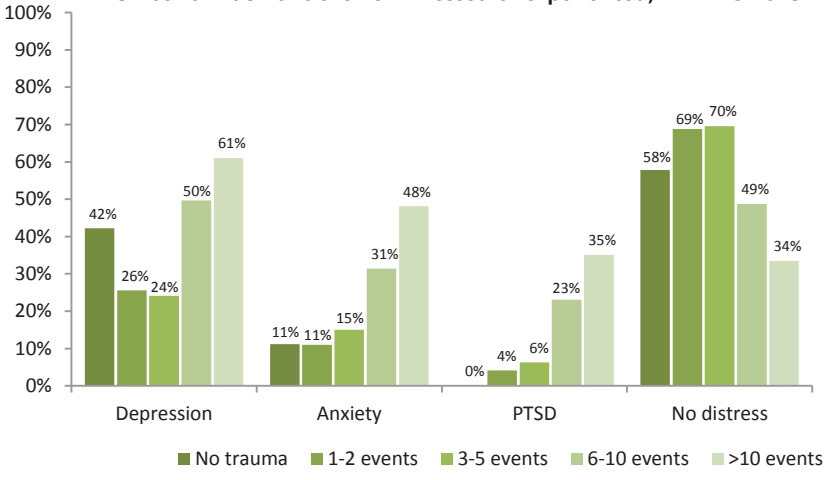


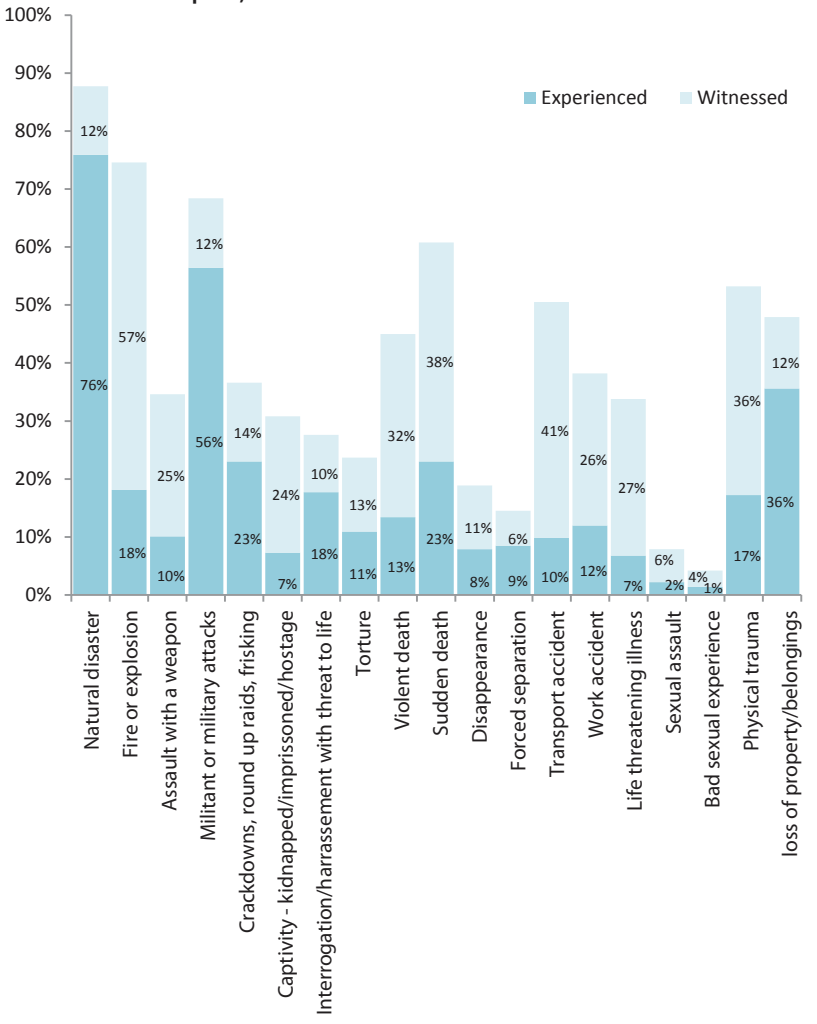

**Figure 5: Weighted prevalence of adults in Bandipora with mental distress, by number of traumatic events witnessed or experienced,[40] KMHS 2015**




[39]. Anxiety (X2 = 29.8, p<0.001), depression (X2: 51.8, p<0.001), PTSD (X2: 28.7, p=0.003).

[40]. Anxiety (X2 = 34.2, p<0.001), depression (X2: 42.2, p<0.001), PTSD (X2: 45.1, p<0.001).

**Figure 6: Weighted prevalence of traumatic events experienced or witnessed by adults in Bandipora, KMHS 2015**

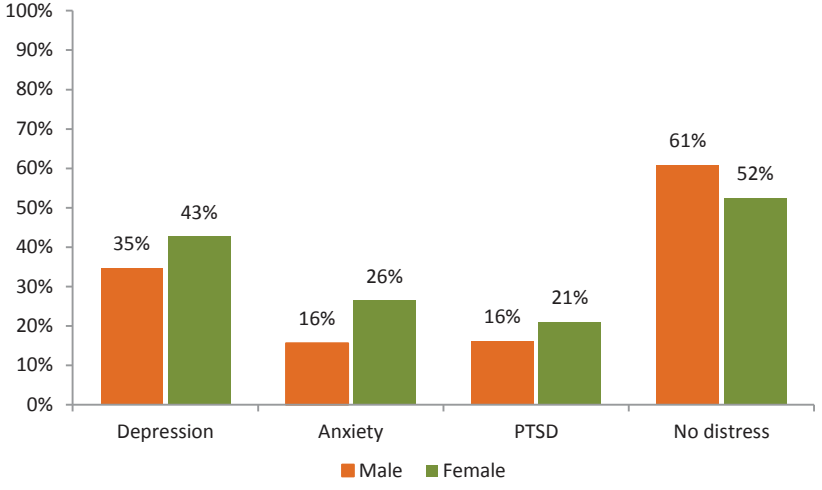


## Anantnag

The proportion of the population in Anantnag suffering from symptoms of probable depression in 2015 was 38%, representing 220 000 adults. The proportion showing signs of a probable anxiety disorder was 19%, representing 58 000 adults, and the proportion with symptoms of probable PTSD was 18%, representing 51 000 adults. In Anantnag, 10% of adults met the diagnostic criteria for severe depression, representing 57 700 individuals, and 6% of adults met all the diagnostic criteria for PTSD, representing 16 500 individuals.

A higher proportion of women (48%) were classified with a probable mental disorder compared to men (39%), the difference was not statistically significant.

**Figure 1: Weighted prevalence of adults in Anantnag with mental distress, by sex,[41] KMHS 2015**




[41]. Anxiety (X2 = 9.3, p=0.009), depression (X2: 3.3, p=0.124), PTSD (X2: 2.1, p=0.276).

**Figure 2: Weighted prevalence of adults in Anantnag with mental distress, by age group,[42] KMHS 2015**

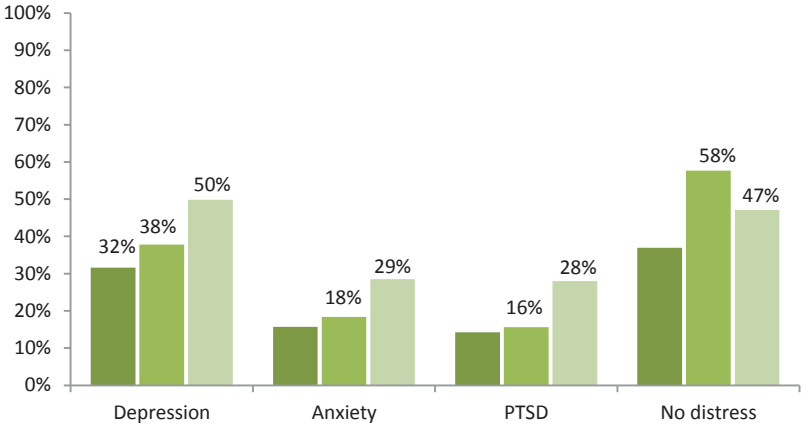
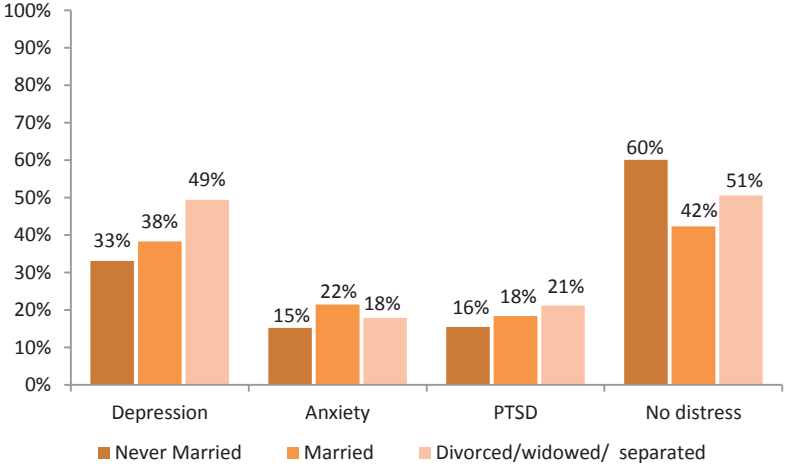



**Figure 3: Weighted prevalence of adults in Anantnag with mental distress, by marital status,[43] KMHS 2015**




[42]. Anxiety (X2: 7.5, p=0.113), depression (X2: 10.4, p=0.130), PTSD (X2: 11.1, p=0.024).

[43]. Anxiety (X2 = 2.8, p=0.376), depression (X2: 4.2, p=0.271), PTSD (X2: 1.25, p=0.535).

**Figure 4: Weighted prevalence of adults in Anantnag with mental distress, by education,[44] KMHS 2015**

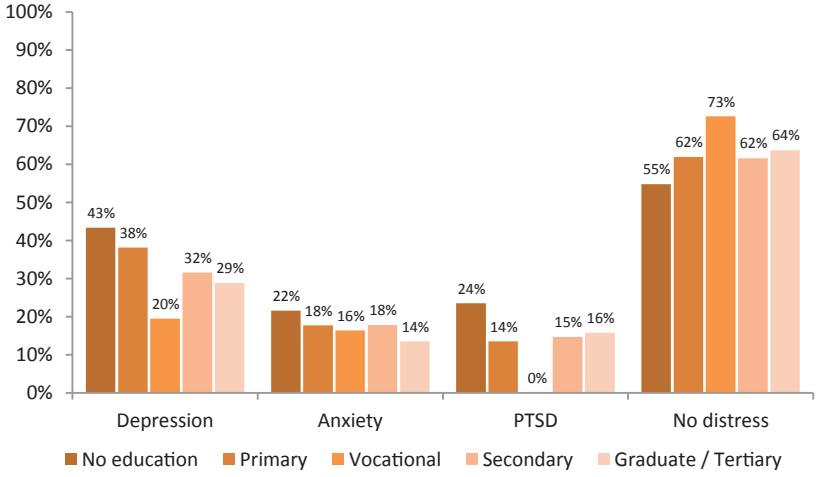
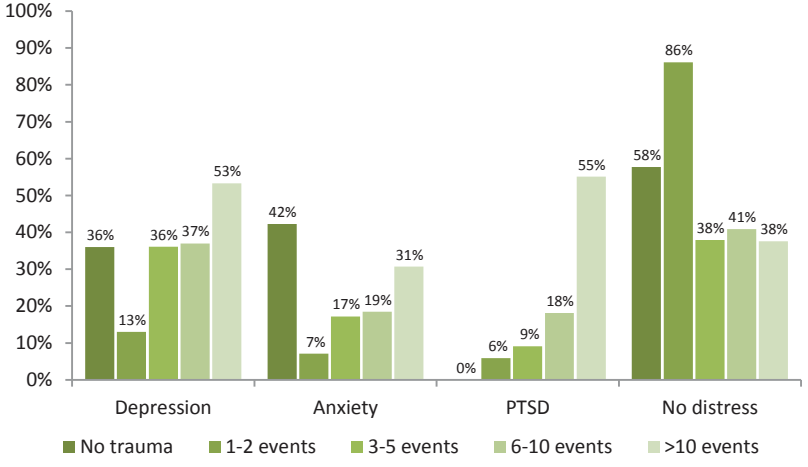


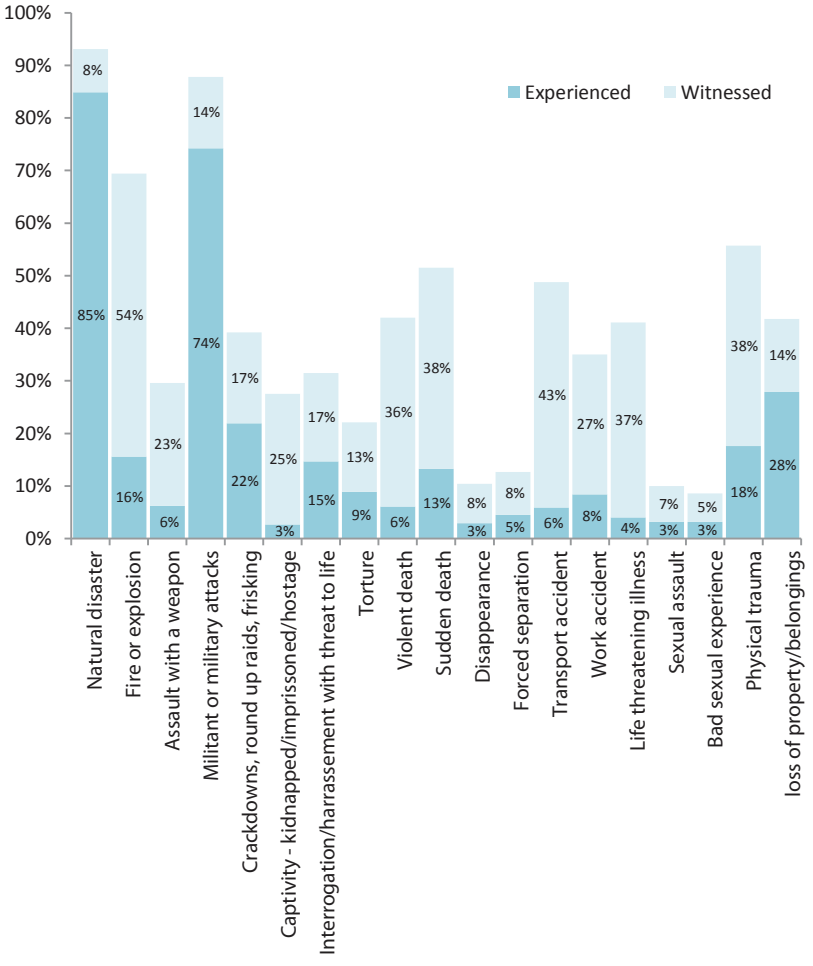

**Figure 5: Weighted prevalence of adults in Anantnag with mental distress, by number of traumatic events witnessed or experienced,[45] KMHS 2015**




[44]. Anxiety (X2 = 49.1, p<0.001), depression (X2: 42.2, p<0.001), PTSD (X2: 30.2, p=0.002).

[45]. Anxiety (X2 = 2.0, p=695), depression (X2: 13.1, p=0.03), PTSD (X2: 18.9, p<0.02).

**Figure 6: Weighted prevalence of traumatic events experienced or witnessed by adults in Anantnag, KMHS 2015**

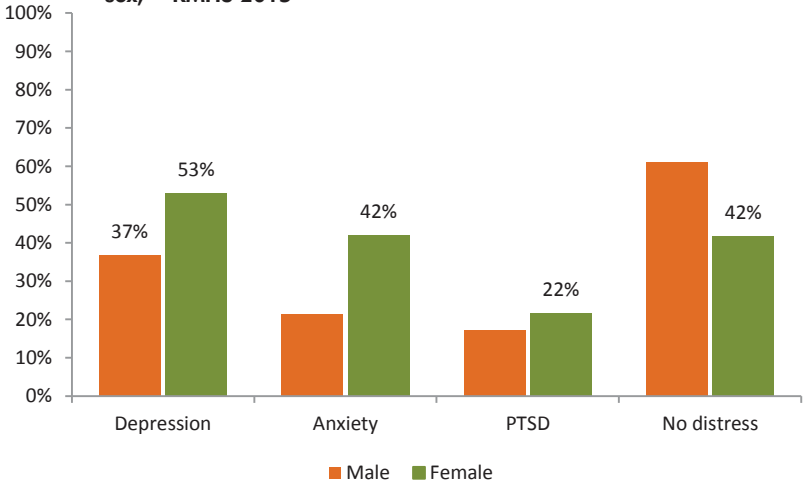


## Kupwara

The proportion of the population in Kupwara suffering from symptoms of probable depression in 2015 was 58%, representing 225 000 adults. The proportion showing signs of a probable anxiety disorder was 28%, representing 68 000 adults, and the proportion with symptoms of probable PTSD was 19%, representing 35 000 adults. In Kupwara, 9% of adults met the diagnostic criteria for severe depression, representing 38 600 individuals, and 10% of adults met all the diagnostic criteria for PTSD, representing 24 300 individuals.

A significantly higher proportion of women (58%) were classified with a probable mental disorder compared to men (39%).

**Figure 1: Weighted prevalence of adults in Kupwara with mental distress, by sex,[46] KMHS 2015**




[46]. Anxiety (X2 = 23.0, p<0.001), depression (X2: 12.1, p=0.003), PTSD (X2: 1.5, p=0.331).

**Figure 2: Weighted prevalence of adults in Kupwara with mental distress, by age group,[47] KMHS 2015**

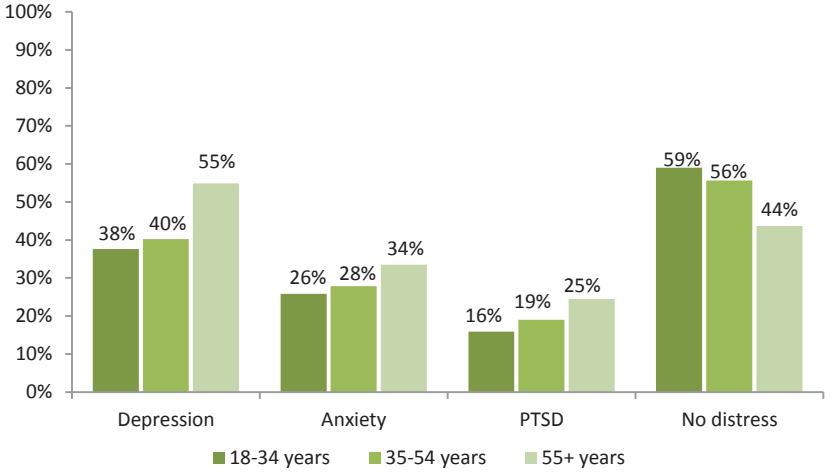
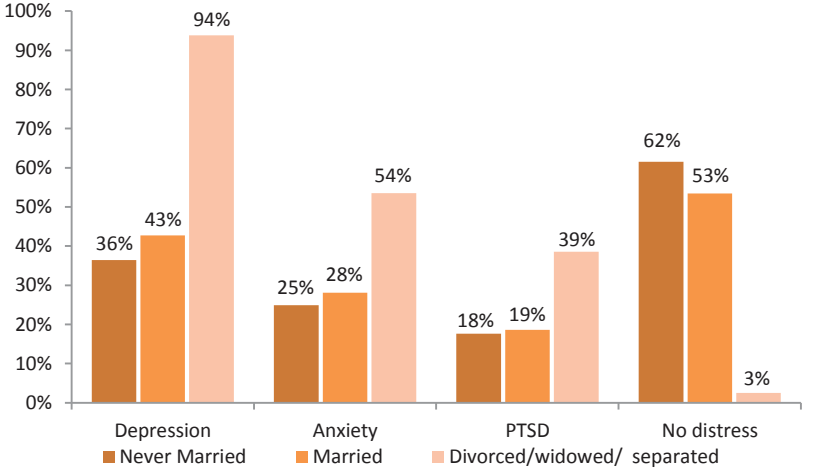



**Figure 3: Weighted prevalence of adults in Kupwara with mental distress, by marital status,[48] KMHS 2015**




[47]. Anxiety (X2: 1.17, p=0.659), depression (X2: 7.2, p=0.076), PTSD (X2: 11.1, p=0.324).

[48]. Anxiety (X2 = 8.9, p=0.012), depression (X2: 10.1, p=0.013), PTSD (X2: 0.6, p=0.612).

**Figure 4: Weighted prevalence of adults in Kupwara with mental distress, by education,[49] KMHS 2015**

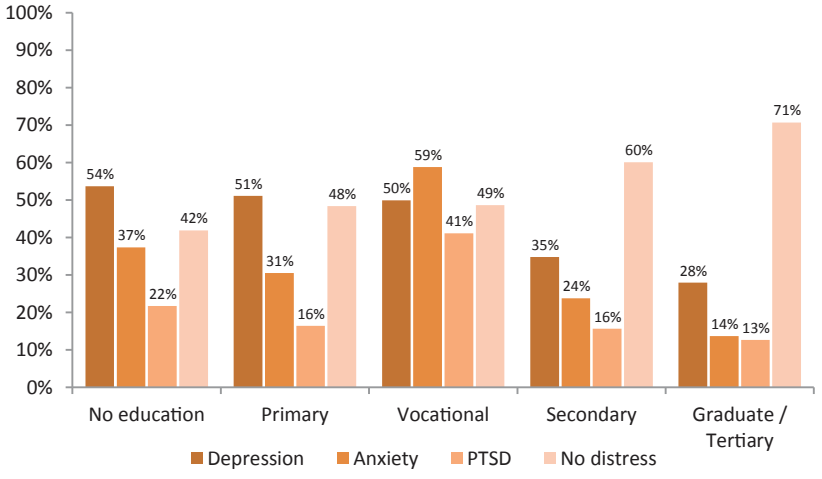
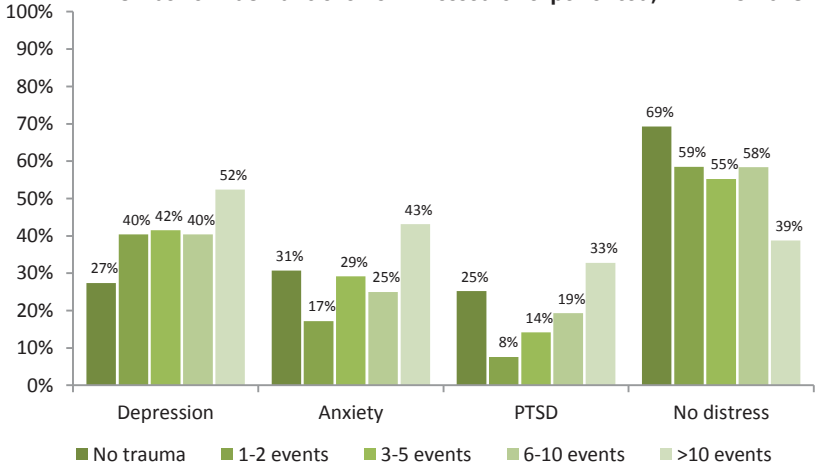


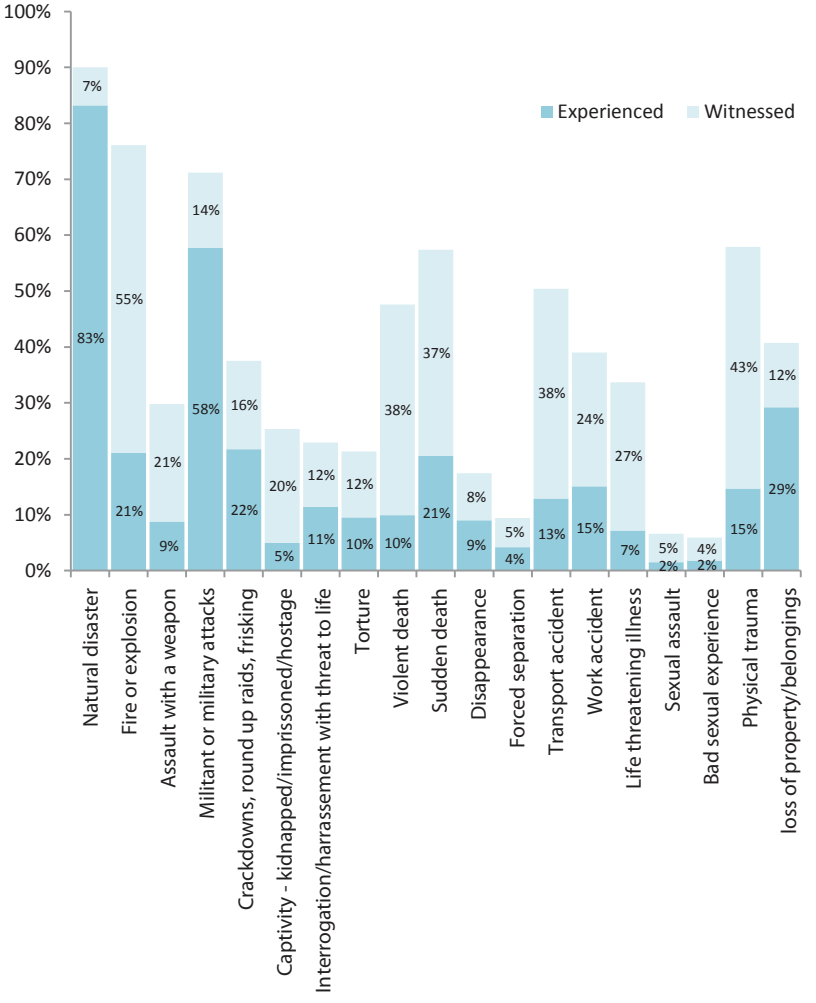

**Figure 5: Weighted prevalence of adults in Kupwara with mental distress, by number of traumatic events witnessed or experienced,[50] KMHS 2015**




[49]. Anxiety (X2 = 32.6, p=0.005), depression (X2: 31.2, p=0.017), PTSD (X2: 18.3, p=0.102).

[50]. Anxiety (X2 = 9.0, p=0.163), depression (X2: 4.03, p=0.581), PTSD (X2: 18.7, p=0.014).

**Figure 6: Weighted prevalence of traumatic events experienced or witnessed by adults in Kupwara, KMHS 2015**



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