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مركز العالم العربي للبحوث والتنمية
Arab World For Research & Development

Burns Action Research Programme in Palestine **(Community-Level Research into Epidemiology, Aetiology and KAP of Burn Injuries)**

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Acrynoms

AWRAD: Arab World for Research and Development

CGBIPR: The Centre for Global Burn Injury Policy and Research

FGDs: Focus Group Discussions

GS: Gaza Strip

HHs- Households

KAP: Knowledge, attitudes, and practices survey

KIIs: Key Informant Interviews

LP gas: liquefied petroleum gas

MAP: Medical Aid for Palestinians

MoH: Ministry of Health

NIS: New Israeli Shekel

PCBS: Palestinian Central Bureau of Statistics

WB: West Bank

WBGs: The West Bank and Gaza Strip

WHO: World Health Organization

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Introduction

Burn injuries have reached unprecedented levels in the West Bank and Gaza Strip (WBGS). Whilst there have been attempts to promote prevention through awareness targeting mainly mothers and children, there remains a significant problem and continued disruption of power supplies, alternative cooking, lighting and heating along with damaged/inadequate infrastructure (including living accommodation) all contribute to the high incidence of burn injuries, especially amongst children.

In the West Bank, there are approximately 7,600 burn injuries annually. Among those, more than 65% are children (Ministry of Health - MoH, 2013). Most burn injuries, about 72%, are a result of scald burns from hot water, and about 21% are flame-related (MoH 2013). Usually, the type of injury is related to the age of the patient, as children are more likely to get scald burn injuries, and flame-related injuries are more likely to occur in adults (MoH, 2013). In 2017, 9 people died as a result of burns, of these, 6 were male and 3 were female (MoH, 2017).

The total number of hospital beds dedicated for the treatment of burn injuries is 10 (MoH, 2016). Furthermore, 7 burn injury cases were referred out of MoH institutes in 2016 for appropriate care. The referral of these cases cost an estimated 233,018NIS (MoH, 2016). In the West Bank, the MoH does not have a specific budget dedicated to the treatment of burn injuries. It is also noteworthy that data and research regarding the prevalence and treatment of burn injuries in Palestine are scant, inconsistent and insufficient. This is because there is no data collection system or standardised database that can be queried to look at over time.

Despite the prevalence and health risk of burns injuries in Palestine, there only exist two medical units that are specialised in burns treatment in both the public and private sectors in the West Bank. The first of these units has been operational since 2000 and is located in the northern region in Rafidia's Public Hospital in Nablus. The second has been operational since 2017 and is located in the southern region of the West Bank in Alia Hospital in Hebron. Both of these units were established with the assistance and support of Medical Aid for Palestinians (MAP). In the absence of specialised burns units in the vast majority of medical centres in Palestine, "burn patients are usually treated in the emergency department and general surgical wards, where the staff members have not received training in burn care." (Interburns, 2016)

In 2012, the Health Minister¹, at the time, announced the inception of a programme of Palestinian national protocols for the treatment of burns. In an interview with Maan News (2012), the Minister stated that the objective of such protocols is to enhance the quality and safety of health care for burn injuries. The

¹ Dr. Fathi Abu Mughli, Ex-Minister, MoH.

development and initiation of this programme were a result of a joint effort from the institutions of the MoH, MAP UK, and the International Medical Education Trust (IMET 2000). A number of training programs and workshops for burn treatment have been conducted over the past few years by MAP UK, Interburns, and IMET2000.

Box 1: Global Insights on Burns (WHO)²

In 2004, nearly 11 million people worldwide were burned severely enough to require medical attention. An estimated 180,000 deaths every year are caused by burns – the vast majority occur in low- and middle-income countries. In India, over 1,000,000 people are moderately or severely burnt every year. Nearly 173,000 Bangladeshi children are moderately or severely burnt every year. In Bangladesh, Colombia, Egypt and Pakistan, 17% of children with burns have a temporary disability and 18% have a permanent disability. Burns are the second most common injury in rural Nepal, accounting for 5% of disabilities. In 2008, over 410,000 burn injuries occurred in the United States of America, with approximately 40,000 requiring hospitalization. For 2000, direct costs for care of children with burns in the United States of America exceeded US\$ 211 million. In Norway, costs for hospital burn management in 2007 exceeded €10.5 million. In South Africa an estimated US\$ 26 million is spent annually for care of burns from kerosene (paraffin) cook-stove incidents. Indirect costs such as lost wages, prolonged care for deformities and emotional trauma, and commitment of family resources, also contribute to the socioeconomic impact. In many high-income countries, burn death rates have been decreasing, and the rate of child deaths from burns is currently over 7 times higher in low- and middle-income countries than in high-income countries³.

About the Research

The Burns Action Research Programme in Palestine is collaboration between the Centre for Global Burn Injury Policy and Research (CGBIPR) at Swansea University, Medical Aid for Palestinians (MAP), Interburns, and the Ministries of Health (MoH) in Gaza and the West Bank. It is fully funded by Interburns/CGBIPR, courtesy of a grant from the National Institute for Health Research (NIHR), and Palestine is one of three primary sites for the field research alongside Ethiopia and Nepal. The project has several work streams covering quality improvement in burn care, research into the epidemiology and aetiology of burn injuries and community-level burn prevention of burn injuries, and emergency preparedness for mass casualty scenarios.

In 2017, Interburns/CGBIPR developed a standardised community survey for burn injuries in resource-poor settings, created from the framework of the WHO's 'Guidelines for conducting community surveys on injury'. This survey covers a wide range of burn injury including epidemiology, aetiology and KAP towards burns in the local community. The survey is focused on providing information that can inform

² https://www.who.int/violence_injury_prevention/other_injury/burns/en/ and <https://www.who.int/en/news-room/fact-sheets/detail/burns>

³ It must be noted here that comparisons are almost to make as the data comes from different years and are estimated under varying definitions of what a burn is. In addition, the quality of each data piece is dependent on the source.

the design and delivery of primary prevention programmes in the selected communities. The survey has been successfully field tested in several districts of Palestine and adapted based on feedback from respondents and the survey field teams.

Methodology

This is the first study of its kind in Palestine. AWRAD implemented the research utilising a mixed – method approach, with quantitative and qualitative data generated through a community survey, focus group discussions (FGDs) and key-informant interviews (KIIs). In Palestine, the research covered both the West Bank and Gaza, with three contrasting sites in each territory of 250 households; thus a total of 750 households in West Bank and 750 in Gaza. The exact sites for the community surveys were identified and agreed by the MoH-led steering committee on burns in each region. The total number of individuals listed in the households visited was 8,166, with an average family size of 5.44 (which is consistent with the latest PCBS Census data in 2017).

The Survey

The selected governorates and (contrasting community) in West Bank and Gaza were selected purposively, to capture the diverse nature of Palestinian realities in terms of region, level of urbanisation/ruralisation taking into consideration the Bedouin communities, distance from urban centres, refugee status, proximity to the Separation Wall in the West Bank and the border areas in Gaza. The following table present a brief on the six contrasting communities targeted in this study.

Table 1: Description of Sample Communities	
Target community	Description
West Bank	
Hebron city	Urban Region: South of West Bank Population: 201,063
Nablus Region	Collation of refugee camps (close to urban centre) including Balata camp, Askar camp and Ein Beit Elma camp Region: North of the West Bank Population: 29,627
Jordan Valley and Eastern Rift (Including Jericho and Tubas Governorates)	Collation of villages/some with Bedouin background- Area C, near settlements and the Wall Region: Middle and North East Population: 43,064
Gaza Strip	
Gaza city	Urban Region: Middle

	Population: 590,481
Jabaliya - North region	Collation of rural/Bedouin communities (close to boarder) including Beit Hanoun, Beit Lahya, Um Al Naser (Bedouin village) Region: North of Gaza Strip Population: 146,812
Gaza Middle/South	Collation of refugee camps (largest refugee population in Al Nuseirat camp, Al Burij camp and Al Maghazi camp) Region: Middle/South of Gaza Strip Population: 77,928

In each contrasting community, localities and households were selected using a randomized approach. In this case, the first stratum is the *governorate* (contrasting community) and the second stratum the locality (or equivalent in the case of Bedouin collations). AWRAD used the results of latest population census (PCBS, 2017) as its *sampling frame to map out all the targeted localities in the governorate including population size in each*. A detailed description of the sample selection, size, distribution and characteristics is attached in Annex I.

All interviews were face-to-face within the household, and the selection of the respondent was based on the ability of this person to represent the household; his/her knowledge of the issue of burns and its relation to his/her own family. In addition, this person had the ability to make decisions within the context of the family in view of their role in deciding the appropriate recourse in the case of burns. The family will select the most suitable person/s to provide the needed information on its behalf including adult persons who were actually burned.

Focus Group Discussions (FGDs)

With the survey, AWRAD organized twelve (12) FGDs which were distributed in the targeted regions and including various stakeholders. The FGDs targeted community members including 153 teachers, local elected leaders and women's groups or cooperative members. They also included FGDs with parents, women and other caregivers. In addition, FGDs were organized with medical professionals, nurses, community health workers and specialists. Annex 2 provides a description of all 12 FGDs and their participants and locations.

Key informant interviews (KIIs)

AWRAD carried out ten (10) KIIs with experts working and familiar in this field including the responsible units in MoH in both the WB&GS, steering committee members, specialised units in the relevant hospitals,

health workers/educators, public health centres and community leaders. The full list of interviews is attached in Annex 3.

Research Challenges

Research in Palestine has its occupation – related and internal challenges. The following are examples of the challenges faced by the research team and mitigation measures utilised to overcome them:

- 1) Field researchers faced a number of movement restriction and difficulties in accessing some communities that are classified as Area C in the West Bank (and H2 in Hebron City). Some of them were turned back by occupation checkpoints or were unable to reach closed areas (especially in the Jordan Valley and H2 area within the city of Hebron). They had to either find alternative, more arduous, roads to reach their research communities or return when the roads are safer and accessible.
- 2) In Gaza, the ruling Government, through its Ministry of Interior (Mol) – Internal Security, requires that all research centres obtain a permit to conduct field work for all survey's. The process of obtaining the permit is undefined and the duration is unlimited by a time frame. In doing that, the Mol conditioned our ability to field our survey by removing some questions or answers that were deemed as incongruent with their (security concerns). After six weeks of discussions, the research team obtained the permit and negotiate the inclusion of as many of the (originally deemed as inappropriate), but some were deleted. Those include questions on the road trip of the burned case and all answers that were open-ended. To make up for any deletions, AWRAD utilised the FGDs and the KIs to bring deeper understanding of these issues.

Analysis of Results

This section provides an analysis of the quantitative and qualitative data around the research questions of the study including prevalence and distribution of burns, environmental and cultural aspects of burns, conditions and causes of burns, treatment and access to various forms of care, recovery and impact on victims and families.

Prevalence of Burns

The survey shows that 1.5% of Palestinians in the West Bank and Gaza Strip were exposed to serious burns that required medical attention (outside of the home in any type of health facility/post) or/and led to the need to rest for at least 24 hours, during the past 12 months. In view of the six contrasting communities, the rates are as follows:

Table 2: Prevalence Rate per Region and Community	
Region/Community	Prevalence Rate

Deir Al Balah (Middle of Gaza Refugee Camps)	1.59%
North Gaza (Rural/Bedouin)	2.35%
Gaza City (Urban)	1.00%
Total – Gaza Strip	1.64%
Nablus (Refugee Camps)	1.75%
Jericho/Jordan Valley (Rural/Bedouin)	1.79%
Hebron City (Urban)	0.08%
Total – West Bank	1.20%
Total – West Bank and Gaza Strip	1.50%

The results reflect the following explanatory elements:

- 1) Regional Variance: The rates vary by region where prevalence in Gaza is higher (1.64%) than in the West Bank (1.20%).
- 2) Type of Community: In the targeted regions in the West Bank, the prevalence rate is almost equal in the refugee camps and the rural/Bedouin communities; the lowest rates are in the urban centre (Hebron city). In Gaza, the rate is higher in the rural/Bedouin communities, followed by refugee camps and urban centres (Gaza city).
- 3) Family Size: In each region, there is a correlation between family size and regional variance. The present survey shows that in Gaza, Deir Al Balah region has the highest average family size (6.02) of the overall sample (including HHs reporting burns and those which do not), followed by North of Gaza (5.96) and Gaza City (5.66). In the West Bank, Jordan Valley rural/Bedouin areas (5.4) have the highest average family size, followed by the Nablus refugee camps (4.78) and the city of Hebron (4.42). Families with burns exhibit higher family size than the overall sample population and the overall population in the targeted areas. For example, while the average family size for Deir Al Balah is 5.5% (PCBS, 2017), the average family size among families with burned individual/s is 6.6. In Gaza city, the 2017 PCBS average is 5.7, compared to 6.19 among families with burned individual/s. The above survey data show that the average family size of the overall sample in Jericho rural areas and Nablus refugee camps are (5.4 and 4.78 respectively), these rates reach 5.96 in the Jericho and 6.4 in the Nablus refugee camps sample of families with burned individuals.
- 4) Nuclear families, however, exhibit higher burn rates (2.65%) than extended families (1.4%). This might be due to the apartment residence style used by nuclear families, compared to large houses in open spaces used by extended families.

Box 2: Estimated Number of Burns in the WB&GS
 The research reveals that there are no reliable or unified records of burns in Palestine. It was impossible to find one number that indicated number of burns that are moderate or severe (burns that required medical attention in a health facility/post or/and led to the need to rest

for at least 24 hours). As such, AWRAD through this study, and for lack of a better alternative as of the present time, opted to provide an estimated number of Palestinians with moderate and severe burns for the year 2018.

Assumptions:

The estimate is derived based on the following assumptions:

- The three targeted regions in Gaza are representative of the Gaza Strip as a whole;
- The three targeted regions in the West Bank are representative of the West Bank as a whole;
- Hence, the rate for the Gaza Strip is 1.64 and the rate for the West Bank is 1.2;
- The population of the West Bank and Gaza Strip is 4,781,248 at the start of 2018 (1,912,499 in Gaza and 2,868,749 in the West Bank) PCBS, 2017 Census.

Calculations:

Gaza Strip: $1.64\% \times 1,912,499 = 31,365$

West Bank: $1.20\% \times 2,868,749 = 34,425$

Total estimated annual number of burns in the WB&GS = 65,790

Distribution of Burned Palestinians

The data reveal regional, age, and gender variations in the prevalence of burns. In total, 184 households out of the 1,500 approached reported burns. Among them, 175 reported one burn injury, while 9 reported two, and one reported three burn injuries (for a total of 196 burn injuries). Out of these burn victims, only 124 were taken to a health facility/post and the rest (72) were treated at home (indicating minor burn injury). The following analysis considers all cases, the ones that were treated at home and the ones that were treated in a formal health facility. The following are illustrative of the distribution:

- More than two-third of the reported burns are in the Gaza (69.4%) and about one third (30.6%) are in the West Bank.

Table 3: Distribution of Burns by Region		
	Frequency	Percent
Gaza Strip	136	69.4
West Bank	60	30.6
Distribution of Burns by Targeted Community		
Gaza Middle Refugee Camps	57	29.1
North Gaza Rural Areas	48	24.5
Gaza city	31	15.8
Jericho and Jordan Valley Rural and Bedouin	25	12.8
Nablus Refugee camps	24	12.2
Hebron City	11	5.6

Table 3: Distribution of Burns by Region		
	Frequency	Percent
Gaza Strip	136	69.4
West Bank	60	30.6
Total	196	100.0

Females comprise the majority of burned family members (69.4%), while males comprise (30.6%) of the burned members.

Table 4: Distribution of Burns by Gender		
	Frequency	Percent
Male	60	30.6
Female	136	69.4
Total	196	100.0

- Children comprise the largest group among the burned with 39.3% less than 18 years old (24% of them are 8 years or younger). 28.6% are in the age group of 30-50, while 19.9% are youth (18-30 years old). The rest (12.2%) are more than 50 years old. The age distribution of burned Palestinians is slightly older than the overall population (PCBS, 2017).

Table 5: Distribution of Burns by Age		
	Frequency	Percent
8 years or less	47	24.0
9-17	30	15.3
18-30	39	19.9
31-50	56	28.6
51 plus	24	12.2
Total	196	100.0

It was, however, noted that while the majority of adults injured during the past year were females, male children are disproportionately exposed to risk (with higher rates than female children). Out of the 77 children (under 18), 42 of them were reported to be males (55%) and 35 females (45%).

- Since a large group of the injured is children, they have no formal education (21.4%). 36.2% have 9 years or less education. An additional 23% have secondary education. 19.4% have some or completed their college/university education.
- The education of burned individuals is not very different from the education of the overall population (PCBS, 2017).

	Frequency	Percent
Not applicable	42	21.4
Illiterate	6	3.1
Elementary	34	17.3
Preparatory	31	15.8
Secondary	45	23.0
2-Year College	7	3.6
University	31	15.8
Total	196	100.0

- As mentioned above, women are at a higher risk of burns, especially if they were home care-takers, who comprise 41.8% of the burned. Students (who are mostly children and youth) as well as the unemployed are also at risk (with 23% and 23.5% respectively).

	Frequency	Percent
Home care-taker	82	41.8
Does not work	46	23.5
Student	45	23.0
White-collar employee	10	5.1
Worker	8	4.1
Professional	2	1.0
Farmer	1	.5
Craftsmen	1	.5
Retired	1	.5
Total	196	100.0

- The vast majority of burned individuals live in nuclear families (88.8%) and 11.2% live within extended families. This is reflective of the overall population where 89% of the families are nuclear (PCBS, 2017).

Table 8: Distribution of Burns by Type of family		
	Frequency	Percent
Nuclear family	174	88.8
Extended family	22	11.2
Total	196	100.0

- The vast majority of burned individuals live in concrete (cement brick) houses (87.8%), while 9.7% live in huts or tents (this is especially true in the North of Gaza and the Jordan Valley), with a small minority living in stone homes (2.5%).

Table 9: Distribution of Burns by type of House		
	Frequency	Percent
Concrete (cement bricks)	172	87.8
Hut/tent/tin house	19	9.7
Stone	5	2.5
Total	196	100.0

Environmental and Cultural Aspects

The following section presents the contextual aspects and risk factors concerning exposure to burns, as well as knowledge, attitudes and practices (KAP).

Cooking and Source of Electricity

The vast majority of Palestinian households cook in a separate kitchen within the building (89.6%). Around 6.9% of the households cook within the house (but without a separate kitchen). The rest (3.5%) of the households cooks in a separate building or outdoors. Families with reported burns tend to report double the rates than the average sample of cooking inside the house but without a designated kitchen (12.4 %).

	Average for all HHs	HHs with Burns
Inside house, no kitchen	6.9	12.4
In the house, with separate kitchen	89.6	85.9
Outdoors/others	3.5	1.7
Total	100.0	100.0

The vast majority of households (91.1%) rely on an LP Gas stove, while 4.8% use an electric stove. Some (1.8%) use a coal pot and others (1.9%) use three-stone stove. The rest (0.40%) use a Kerosene-stove or other means. The use of three stone and coal pot is slightly lower than average among families reporting burns (3.7% to 4.7% respectively). In contrast, the use of LP gas and electricity together is slightly higher on average than among families reporting burns (95.9% to 94.6%).

	Average for all HHs	HHs with Burns
Three stones (fire)	2.2	1.9
Coal pot	2.7	1.8
Electricity	3.8	4.8
LP gas	90.8	91.1
Other [e.g., Kerosene]	0.5	0.4
Total	100.0	100.0

Among Palestinians households that use LP gas, 88% say that they keep the gas cylinder inside the house, while 12% outside. In comparison, 90.5% of households reporting burns say that the gas cylinder is inside the house and 9.5% outside.

Almost all Palestinian households (97.5%) are connected to the electricity grid. Only 2.5% are not connected (all in Bedouin and remote communities in the West Bank). The connectivity rate is slightly lower among families that report burns (96.2% connected and 3.8% not connected).

	Average for all HHs	HHs with Burns
Yes	97.5	96.2
No	2.5	3.8
Total	100.0	100.0

Sources of Risk of Burns

In general, the main source of risk is perceived to be (heat and flame) as 36% reported such a risk. This was followed by (electric current) reported by 31.6%, hot liquid reported by 28.6%, and chemicals reported by 2.7%. The rest (1.2%) either report other risks or do not know. HHs reporting burns assess risk differently, where hot liquid/steam and gas are considered as the key risk factor by 37.3%, followed by heat and flame (32.4%) and electric current (23.8%).

	Average for all HHs	HHs with Burns
Heat and flame	36.0	32.4
Electric current	31.6	23.8
Hot liquid, steam or gas	28.6	37.3
Chemicals	2.7	4.3
Other / Don't know	1.2	2.1
Total	100.0	100.0

Children are reported to be exposed to the highest risk of burns (60.5%), followed by women (36.6%). Only 1.7% reported that men are at the highest risk, while 1.2% reported that they do not know or others. HHs reporting burns also view children as the most at-risk if burns (albeit at a lower level – 56.2% - than the general sample). They tend to assess risks by women at a higher level (39.5%) than the average sample.

	Average for all HHs	HHs with Burns
One of the children	60.5	56.2
One of the women	36.6	39.5
One of the men	1.7	2.7
other	1.2	1.6
Total	100.0	100.0

The activity that involves the highest risk of burns is playing (43.6%), followed by cooking and eating (40.2%), and working within the household (11.1%). Only 1.5% identified working outside of the home as the highest risk and 3.6% identified other risks or said that they do not know. In comparison to the average HHs, HHs reporting burns identified cooking/eating as the number one risky activity (45.6%) indicating risks for women and children at home, followed by playing (36.8%) indicating risks for children in general and male children in particular.

	Average for all HHs	HHs with Burns
Cooking/Eating	40.2	45.4
Playing	43.6	36.8
Working within the home	11.1	11.4
Working outside the home	1.5	2.7
Other/ Don't know	3.6	3.7
Total	100.0	100.0

The most risky time is considered by the full sample to be the afternoon (39.9%, where the cooking, eating and playing take place). The second most risky time is the morning (36.0%), followed by night time (14.9%). As much as 9.1% were unable to identify the most risky time for burns. HHs exposed to burn incidents disagree and consider the morning to be the most risky time of the day (49%), followed by the afternoon (36.7%) and at night (8.7%). A smaller percentage (5.6%) of them says that they do not know as compared to the overall sample.

	Average for all HHs	HHs with Burns
In the morning	36.0	49.0
In the afternoon	39.9	36.7
At night	14.9	8.7
Other/ Don't know	9.2	5.6
Total	100.0	100.0

FGD participants and health practitioners emphasize the higher prevalence and severity of burns during the winter. To them this due to the following:

“Winter is the time when families sit crammed in one room around the gas heater or the burned wood; it is a huge risk especially when you have children and elderly.” (Community health worker, Khan Younes)

“People die from inhaling fumes resulting from closing all the doors and windows, while keeping the heater on.” (Community health worker, Hebron)

“During the winter, children tend to ignite more fires in the backyard of the house; they like to think that is for heating, but it is more for playing.” (Mother, Jordan Valley)

Knowledge

The vast majority of the overall sample agrees that burns can cause bad scars, where 42.6% strongly agree and 50.8% agree. The rest (6.6%) are either neutral or disagree. A similar pattern exists among HHs with burns.

	Average for all HHs	HHs with Burns
Strongly Agree	42.6	39.3
Agree	50.8	54.6
Neutral/disagree	6.6	6.1
Total	100.0	100.0

In terms of prevention, a majority of the overall sample agrees that most burns are preventable, with 12.1% strongly agree and 52.5% agree (64.6%). As much as 22.5% are neutral, and 12.9% disagree. A slightly larger percent of representatives of HHs with burns agree that burns are preventable (68.4%). 24% are neutral and 7.6% disagree.

	Average for all HHs	HHs with Burns
Strongly Agree	12.1	13.3
Agree	52.5	55.1
Neutral	22.5	24.0
Disagree/ Strongly Disagree	12.9	7.6
Total	100.0	100.0

This might indicate a level of (fatalism) among many study participants as the FGDs revealed that a sense of fatalism is prevalent:

“It is God’s will; nothing could be done to prevent a burn.” (Woman, Jordan Valley)

“As much as you try; accidents will happen.” (Male, North Gaza)

“If it is the will of God; there is nothing that you could do about it.” (Woman, Middle Gaza)

“What our children will do and when they get in trouble, we can’t do anything about that; it is not in our hand.”
 (Woman, Nablus Refugee Camps)

The data also show that a sizable minority of the overall sample believes that most people with burns die as a result of their injury (4.8% strongly agree and 28.4% agree), with as much as 29% are neutral. In contrast, 37.8% disagree with this notion. HHs with reported burns are more neutral about this (44.9%), and 31.1% agree. In contrast, 24% disagree.

Table 19: Most people with burns die as a result of their injury (%)		
	Average for all HHs	HHs with Burns
Strongly Agree	4.8	3.0
Agree	28.4	28.1
Neutral	29.0	44.9
Disagree/ Strongly Disagree	37.8	24.0
Total	100.0	100.0

The fatalistic beliefs are packed by a sense of isolation and limited access to services as revealed in the qualitative data:

“Those who live in remote areas and in Area C find it difficult to get immediate help for serious injuries and as such wait and that leads to complicating the case, leading to death.” (Health Specialist, West Bank)

“When you have no financial resources to get help for your child, you will wait and some die because of that.”
 (Man, Hebron)

“Some families will go for the cheaper and available option of traditional medicine in their community; this leads to conditions that are not amenable for help at a later stage.” (Medical specialist, Gaza)

Practices

Respondents were asked about what they would do in case of burns. In case, hot water was spilled on their arm or that of a family member, the majority (68.6%) said that they would immediately apply cold water. 14.5% said that they would apply a medical ointment or a paste (such as toothpaste). 3.7% would apply aloe vera. As much as 12.5% said that they would apply other materials. The data reveal that HHS with a burn experience have more knowledge of the best way to deal with a burn, where as much as 86.7% said that they would apply cold water. This best practice was backed by medical specialists from burn units in Hebron and Nablus hospitals:

“The best way to deal with a burn is to immediately apply cold water.” (Doctor, Hebron burn unit)

“Most people don’t know that they should only use cold water or towel; they apply the wrong materials such as ointments preventing the burn from breathing and healing.” Nurse, Nablus burn unit)

	Average for all HHs	HHs with Burns
Apply cold water	68.6	86.7
Apply aloe Vera	3.7	2.0
Apply ointment/paste	14.5	6.1
Other	12.5	5.1
Total	100.0	100.0

The qualitative data showed that families use the following ingredients to deal with a burn resulting from a spill of hot liquid: Salt, ice, ghee, honey, tomato paste, oil, flower, starch, sugar, eggs, sesame paste, yogurt, tomato, tea leaves, milk, dry pomegranate skin, clod flower, potatoes and some traditional herbal mixes.

In case of clothes catching fire, the majority of both overall sample and HHs with burns would smother the person with cloth. The second most popular option is taking off clothes, followed by jumping in water.

	Average for all HHs	HHs with Burns
Stop drop and roll	5.6	4.6
Smother with cloth	61.5	58.2
Jump in water	9.1	14.3
Run	3.9	3.1
Take off clothing	16.6	17.9
Don't know/other	3.4	2.0
Total	100.0	100.0

In terms where a family would take a person with a minor burn immediately, HHs with burn experience are more trusting of traditional healers (48%), compared to 35.3% among the overall sample. They are less trusting of modern medical facilities (health posts, clinics and burn units in hospitals compared to the overall sample (21.3% to 33.5%).

Table 22: If someone in your family received a small/minor burn where would you take them quickly for treatment? (%)		
	Average for all HHs	HHs with Burns
Traditional healer	35.2	48.0
Pharmacy	26.4	28.6
Health post/clinic	27.2	17.3
Community health worker/nurse	1.4	2.0
Go to PHU/Hospital	4.9	2.0
Other [specify]	4.5	2.0
Total	100.0	100.0

The qualitative data showed that families use a number of ingredients in case of a minor burn. The most used are: toothpaste, honey or beeswax, olive oil or other vegetable oils such as corn or sunflower, cold flower, potato, egg whites, and yogurt.

Box 3: Widespread belief in Traditional Healers

In Palestine, traditional healers use various ingredients to cure burns (including the ones mentioned above). Belief in traditional healers is not only widespread among the mainstream society, but also among a segment of health specialists. Among the women caregivers and based on the qualitative data, resorting to the following repeated statements (*albeit without any verification*):

“I know many people who were cured by the traditional healer; it is like magic; my cousin was cured within a couple of days.” (Female Caregiver, Jordan Valley)

“We tried doctors, but they didn’t help us achieve results; so we went to the healer and he had the cure; he used a mix of honey and herbs; we’ve seen improvement immediately.” (Male care giver, Middle of Gaza)

Some of the participants go as far as linking the use of traditional cures to religious interpretations that they subscribe to:

“Honey and olive oil was mentioned in the Quran; they cure almost everything.” ((Female Caregiver, Old City - Hebron)

“Some of the traditional healers use the Quran; they read verses from the Quran to provide power to the cure of a burn.” ((Female Caregiver, Bedouin village, Gaza)

Some health specialists confirm these views and provide the following interpretations for the use of traditional healers:

“Many people especially in remote areas including area under Israeli control and with many checkpoints find that it is easier to access traditional healers than go to city centres to find health posts.” (Health Specialist – Hebron)

“It is more convenient to use a healer because the health system is too complicated; once you are go to a clinic, you must wait and after that you must wait for a referral to a burn unit; then wait again to get an appointment; then wait when you arrive, and come back many times. Healers are just around the corner.” (Health Specialist, Nablus)

“Traditional healers are less costly as they will see you once and then the travel cost is less.” (Health Specialist, Gaza)

Some health experts and practitioners vehemently oppose the use of traditional healers describing what they do as mockery, deceitful and dangerous:

“Most people who are cured by traditional healers are victims of first-degree burns; they would’ve been cured if they just waited. But they are convinced that they were cured by the traditional healer.” (Nurse, Jordan Valley)

“Victims and their families are desperate, looking for comfort and they find that in the words of the healer and the repeated unverified stories about the magic of traditional medication! Modern medicine takes time, as that is the only way the serious burns are cured.” (Health Specialist, Gaza)

“All burn victims, especially the ones with second and third – degree burns, end up coming to the burn units in the hospital; but then for many of them further damage has been inflicted because of the wrong medication and the delay. A child of an educated family lost his life because it was too late.” (Health Specialist, Nablus)

In case of major burns, respondents are more prone to reach out to modern health resources, where a vast majority of both the overall sample (89.7%) and the sample of HHs with burns (86%) would take the burned person to either a health clinic/post, or a burn unit in a hospital. The tendency to use traditional healers for minor burns is reversed in the case of major burns.

Table 23: If someone in your family received a large/major burn where would you take them quickly for treatment? (%)

	Average for all HHs	HHs with Burns
Traditional healer	6.0	3.8
Pharmacy	2.1	6.5
Health post/clinic	44.0	44.9
Community health worker/nurse	2.0	3.8
Go to PHU/Hospital	45.7	41.1
Other/don't know	0.2	---
Total	100.0	100.0

Analysis of the Sample with Burns

This section provides an analysis of the circumstances, causes, first response, and pathway to treatment for individuals who were burned during the past 12 months (from April 2018 – March 2019).

Conditions and Causes

The vast majority of burns took place inside the home (87.2%). Only 6.6% took place in a public space (street or commercial area), and 4.1% at work (including in the farm). The difference between the West Bank and Gaza Strip is noticeable, where the rate of burns inside the home is higher in Gaza (91.2%) than the West Bank (79.7%). This is an additional indication of the relatively substandard living conditions in Gaza as compared to the West Bank. Furthermore, conditions inside the homes are also impacted by the power outages that are regular in Gaza, and mostly absent in the West Bank. In addition, the data indicate the higher levels of unemployment in Gaza, as compared by higher levels of economic activity in the West Bank, as 8.5% of burns in the West Bank took place at work, compared to 2.2% in Gaza.

	Frequency	WBGS	WB	GS
Home	171	87.2	79.2	91.2
Street/ Commercial area	13	6.6	6.8	6.5
Work (Office/ workshop/Farm)	8	4.1	8.0	2.2
Other	4	2.0	6.0	0.00 ⁴
Total	196	100.0	100.0	100.0

In alignment with the previous results indicating the women, home care-takers are the largest group of persons exposed to burns, and that most burns occur at home in the morning or afternoon, the data reveal that the largest group was exposed to burns as in the process of preparing food. This was followed by housework (16.8%). The share of children is also evident from the finding that 13.3% were exposed to burns while playing/leisure time. 4.1% were burned during a ceremony or celebration (yet further confirming the danger of shooting and fireworks during weddings and other social occasions). This is especially true in Gaza, where all burn cases caused by celebratory gunfire or fireworks were reported in Gaza, while no cases were reported in the West Bank⁵. The unsafe home environment in Gaza relative to the West Bank is further confirmed by the finding that 75.8% of the burns in Gaza occurred at home (cooking or doing house work), compared to 52.6% in the West Bank.

⁴ The authorities in Gaza did not feel comfortable having (other) as an option in most questions in the questionnaire, on the basis of (security concerns). Hence, the option (Other) will not appear for Gaza in most of the questions about burned individuals.

⁵ This doesn't exclude the occurrence of burns resulting from gun fire or fireworks in the West Bank, as this was cited as a cause of burns in the FGDs and the KIIs. It is, however, important to note the different political reality in the West Bank, where there are more limitations on gun ownership and use.

	Frequency	WBGS	WB	GS
Cooking	101	51.5	47.5	53.7
Housework	33	16.8	5.1	22.1
Paid work in WBG	4	2.0	3.4	1.5
Paid work in Israel/settlement	2	1.0	3.4	0.00
At a ceremony/celebration	8	4.1	0.00	5.9
Leisure/play	26	13.3	15.3	12.5
Resting/sleeping	9	4.6	10.2	2.2
At home (bombing)	2	1.0	0.00	1.5
Other	11	5.6	10.2	0.7
Total	196	100.0	100.0	100.0

The vast majority of burns were accidental (90.3%). 4.6% were self-inflicted and 4.1% were intentional by others. The rest are not known. The immediate cause of the burn was in the form of hot liquid, steam or gas (43.3%) and in the form of heat and flame (41.1%). 6.1% were caused by an electric current, 3.1% by chemical and 2.0% by bombs/tear gas canisters. There are significant differences between the West Bank and the Gaza Strip in this regard. For example, while 47.1% of Gazans report burns caused by heat and flame, only 28.8% of their West Bank counterparts report the same. Burns caused by an electric current are more than double in Gaza (7.4%) compared to the West Bank (3.4%), due to the substandard quality and reliability of the electric current in Gaza.

	Frequency	WBGS	WB	GS
Heat and flame	81	41.3	28.8	47.1
Electric current	12	6.1	3.4	7.4
Hot liquid, steam or gas	85	43.4	54.2	39.7
Chemicals	6	3.1	3.4	2.9
Bomb/tear gas canister	4	2.0	0.00	2.9
Other	8	4.1	11.9	0.00
Total	196	100.0	100.0	100.0

In case of electricity outages, risk increases as the vast majority of families use candles as source of light in the house. In addition, some use kerosene lamp. Some of the major burn incidents

occurred as a result of using candles and kerosene lamps as reported by the Palestinian Civil Defense. Children are the most affected by such incidents⁶.

The qualitative data also reveal that most blame ignorance, carelessness and inappropriate habits as causes for burns:

“Many don’t know that fires happen when you pour quantities of cooking oil in a hot pot; it will splash in your face and might cause a fire in the whole house.” (Doctor, Gaza)

“Parents place the gas heater too close to the children; the kids seem to be hugging the heater; eventually it will fall at them and cause a fire.” (Male Nurse, Nablus)

“When the electricity is off; parents use candles and they don’t keep them away from children; causing big and deadly fires.” (Community Health Worker, Jordan Valley)

“Families like to sit around the hot food tray; the hot pot and the hot food will eventually spill on the kids.” (Health specialist, Hebron)

“A mother sits the tea tray on her lap and starts pouring hot tea for the kids; both the mother and the kids will be burned.” (Female Nurse, Nablus)

Most of the blame falls on the mothers as they are accused of carelessness. This blame comes from both men and women.

“Mothers are just not paying enough attention to their children; this allows kids to play with fire.” (Female, FGD, Hebron)

“Mothers these days are distracted by soap operas and the Internet; if they paid more attention to children, they wouldn’t be burned.” (Male, FGD, Jordan Valley)

This conventional judgment is a reflection of the duality of discrimination against women. On the one hand, the dominant norms assume that women are the sole responsible for the upbringing and up-keeping of their children. On the other, women have lower levels of exposure and access to knowledge as their participation in awareness activities is limited by their traditional roles.

“Women are discriminate against concerning the issue of burns: They are the ones to be burned more

⁶ 3 children were killed in Hebron Old City and another 3 in Rafah (March 2019) in house fires. According to the Hebron Municipality, the Israeli occupation is to blame as rescue operations were hampered by the closure of the old city and the difficulties to coordinate rescue efforts with the occupation forces that control the area.

than men because they are more exposed to dangers; in addition, they are consistently blamed for burns in the family; they are used as escape goats to cover the substandard surrounding.” (Policy maker and Expert, Ramallah)

“Poverty and hazards around the houses and the factories kill people; women don’t cause fires. Almost no family is asked to keep a fire extinguisher; the law is not enforced in the factories and the work place.”

Treatment and Access to Care

Home Treatment

The vast majority of burned person received immediate treatment (82.7%), with a slightly higher percentage in the West Bank (84.7%) than the Gaza Strip (82.4%). The most popular first aid material used for burns is pouring water on the burned part (74.7%), with 64.8% in the West Bank and 79.5% in the Gaza Strip. The second most popular material is a medical lotion (10.7%), with equal percentages in both regions. As much as 3.7% reported using a raw egg for first aid, with almost equal percentages in both regions.

	WBGS	WB	GS
Pour cold water	74.7	64.0	79.5
Apply an ointment	10.5	10.0	10.7
Apply raw eggs	3.7	4.0	3.6
Other	11.0	22.0	6.2

The data show, however, that 11% used other materials for first aid (listed below).

- For 41.4%, first aid was instant, and for 45.7% was within the first 5 minutes. It took between 6-15 minutes for 8.6% of burned persons to receive first aid and more than 15 minutes for 4.3% (which is alarming to a large extent). For 50% of the cases, a family member performed first aid, and for 43.8% the victim her/himself did that. In 2.5% of the cases, the neighbours performed first aid and for the rest (3.7%) others (including nearby health worker or doctor, or just a stranger) performed first aid.
- In Gaza, victims had to rely on themselves more than in the West Bank in performing first aid (48.2% to 34%). In contrast, reliance on family members is higher in the West Bank than in Gaza (57.1% to 47.3%). In addition, more cases in the West Bank relied on neighbours or others (strangers) than in Gaza (8.9% to 4.5%).

	WBGS	WB	GS
Family member	50.0	57.1	47.3
By the victim him/herself	43.8	34.0	48.2
Neighbours	2.5	4.1	1.8
Other	3.7	4.8	2.7

Seeking Health Care

The majority of burned person were taken to a place for treatment (63.3%) immediately after the burn took place. The rate was much higher in the West Bank (84.3%) than the Gaza Strip (54.4%).

	WBGS	WB	GS
Yes	63.3	84.3	54.4
No	36.7	16.7	45.6

The vast majority of burned persons who were not taken into health care facility (68.1%) believed that home-treatment was sufficient. An additional 11.1% believed that there was no need for treatment in a facility. For 6.9% the health facility was viewed as too far from their locality, and another 6.9% believed that guardians did not show concern for the burn. Gaza respondents cited the belief in home treatment and the long distance from the health facility at much higher rates than West Bank respondents. In contrast, West Bank respondents cited the lack of need for a facility and lack of financial resources at higher rates than Gaza respondents. This might reflect the higher cost for transportation and the remoteness of many of the communities in the West Bank. In contrast, in Gaza, much of the primary health services are provided by the government or the UN free-of-charge.

	WBGS	WB	GS
Had belief in home-treatment	68.1	60.0	69.4
No need for formal treatment	11.1	22.2	9.7
Health facility was very far	6.9	00.0	8.1
Guardians didn't show concern for the burn	6.9	00.0	8.1
Lack of money	4.2	11.1	3.2
No particular reason	2.8	11.1	1.6

Respondents were asked about the first place they visited for treatment. The largest group (45.2%) sought treatment in a hospital (nearby or in another district). Public (governmental or

UN) clinics were also sought by 27.4% of the cases, with a higher rate in Gaza (29.7%) than the West Bank (24%). As much as 11.3% sought treatment in a pharmacy and 9.7% in a private clinic. A much higher percentage of West Bank cases resorted to private clinics indicating two possible explanations: one, the higher levels of income among West Bank residents and the long distances (compared to Gaza) to reach public clinics and hospitals due to the relatively more dispersed geography in the West Bank. Only 2.4% sought treatment from a community health worker/nurse (reported only in Gaza by 4.1%).

	WBGS	WB	GS
Hospital nearby	33.9	32.0	35.1
Hospital in another district	11.3	8.0	13.5
Public clinic	27.4	24.0	29.7
Pharmacy	11.3	8.0	13.5
Private clinic	9.7	18.0	4.1
Community health worker	2.4	00.0	4.1
Other	4.0	10.0	00.0

The varying living conditions in both regions manifest themselves in how burn victims are transported to a health facility. While the majority in Gaza uses public transportation due to very limited resources, the majority of West Bank victims use private cars due to the limited availability of public transportation especially in remote areas.

	WBGS	WB	GS
By foot	26.6	20.0	31.1
Public transportation	42.7	24.0	55.4
Ambulance	2.4	2.0	2.7
Private car	27.4	52.0	10.8
Other	0.8	2.0	00.0

The majority of burned persons who were taken to a health post (75%) were taken within one hour. This rate is much higher in Gaza (79.9%) than the West Bank (68%). In addition, 6.4% were taken to a health post in 2 to 5 hours (8% in the West Bank and 5.4% in the Gaza Strip). The data also show that as much as 8% were taken to a health post in more than 5 hours but within 24 hours (10% in the West Bank and 6.8% in the Gaza Strip). Furthermore, 7.2% were taken in more than 24 hours but in less than two days (12% in the West Bank and 4.1% in the Gaza Strip). Finally, 3.2% had to wait for more than 48 hours, even up to 7 days (2% in the West Bank and 3.8% in the Gaza strip).

Table 33: How long was it between the burn accident and arriving at the health post/pharmacy? (%)

	WBGS	WB	GS
In 1 hour	75.0	68.0	79.9
2-5 hours	6.4	8.0	5.4
6-24 hours	8.0	10.0	6.8
25-48 hours	7.2	12.0	4.1
More than 48 hours	3.2	2.0	3.8

Hospital Experience

For treatment, out of the 124 cases that were treated beyond the immediate home care, 78 (62.9%) went to a hospital immediately, or were referred or chose to go to a hospital after their second-option health treatment. The data below show that for 45.2% the hospital was their first option. The rest (17.7%) were either referred or chose to go to hospital after their first treatment in another health post. The rate for those who visited a hospital either as a first option or as the second option was higher in the Gaza Strip (71.6%) than in the West Bank (50%). The level of a second visit or a referral to a hospital is much higher in the Gaza Strip (23%) than in the West Bank (10%). This is possibly a reflection of the higher quality of primary health care for burns in health posts (other than hospitals) in the West Bank than Gaza.

Table 34: Did you visit the hospital as first option or after health post or pharmacy or other local health facility? (%)

	WBGS	WB	GS
Yes	62.9	50.0	71.6
No	37.1	50.0	28.4
% visiting a hospital as first option	45.2	40.0	48.6
% visiting a hospital as second option/referral	17.7	10.0	23.0

While everyone who sought a hospital treatment was admitted, the majority says that they covered the hospital expenses from their own money (70.6%) with a much higher rate in Gaza (71.7%) than the West Bank (60%). Almost 20% in Gaza say that they borrowed money from family to cover expenses, 20% in the West Bank cite other sources including public health insurance and as much as 20% in the West Bank say that they do not remember. These findings are not supported by the qualitative data where official health experts assert that most cases are treated for free or with symbolic fees:

“Most burn cases are admitted to government hospitals are treated without any cost, as they are covered by government health insurance.” (Health professional, Nablus Region)

*“Persons with burns visit government hospitals or UN clinics. In both cases, they receive free treatment.”
(Health professional, Gaza Region)*

“Much of the treatment and the supplies are paid for by the government; only in some cases, persons with burns go to private doctors or clinics for additional procedures such as plastic surgery.” (Health professional, Hebron Region)

The expenses, associated with treatment of a burn, are not limited to hospitalization expenses. The participants of the FGDs explain:

“We live far away from the hospital in Hebron; every time we come to visit the doctor, we must pay high transportation cost.” (Male Parent, South of Hebron)

“Going to the burn unit in Nablus is a complicated ordeal for us; we live in an area with many checkpoints and procedures to leave and come back; we must take many forms of transportation to get to Nablus.” (Female Parent, Bedouin Community, Jordan Valley)

“I must leave work and escort my son to the hospital every time we must go; it’s been 2 years now and I am losing money and job security.” (Male Parent, North of Gaza)

Impact of Burns and Recovery

The following section provides analysis of the effects and impacts of burns on the health and livelihood of persons injured by burns and their families.

Bodily effects

The majority of people with burns had them on their hands/wrists (51.5%), with a difference between the West Bank (42.4%) and the Gaza Strip (55.9%). Arms of 37.8% were burned (39% in the West Bank and 37.5% in the Gaza Strip). 21.4% had burns on their legs (23.7% in the West Bank and 20.6% in the Gaza Strip). This was followed by head/neck burns (18.4%), with equal percentages in the West Bank and the Gaza Strip. Burns of the trunk were more prevalent in the Gaza Strip (14.7%) than the West Bank (6.8%), for a total of 12.2% impacted.

	WBGS	WB	GS
Hand/wrist	51.5	42.4	55.9
Arms	37.8	39.0	37.5
Legs	21.4	23.4	20.6
Head/neck	18.4	18.6	18.4
Trunk	12.2	6.8	14.7

Impact on Livelihood

The majority of injured persons (69.4%) were able to return to normal activities without need of assistance, 68.3% in the West Bank and 69.9% in the Gaza Strip. 15.8% say that they have partially been able to return to normal activities (20% in the West Bank and 14% in the Gaza Strip). As much as 14.8% were unable to return to normal activities, with 11.7% in the West Bank and 16.1% in the Gaza Strip.

	WBGS	WB	GS
Yes fully (no need of assistance)	69.4	68.3	69.9
Yes, but only partially	15.8	20.0	14.0
No	14.8	11.7	16.1

As much as 16.8% report that they suffer from a disability as a result of the burn injury (8.5% in the West Bank and 20.6% in the Gaza Strip). Among them, as much as 30.3% are unable to use their arm/hand (20% in the West Bank and 32.1% in the Gaza Strip). Another 15.2% are partially unable to use their arm/hand (20% in the West Bank and 14.3% in the Gaza Strip). 9.1% of the total burned sample report loss of vision (all of them in the Gaza Strip).

One tenth of the persons with burn injury report the need (major/minor) assistance when bathing (more in the West Bank – 15.1% than in the Gaza Strip – 8.1%). In addition, 5.6% report the need for assistance in climbing stairs (8.5% in the West Bank and 4.4% in the Gaza Strip). Another 4.1% report the need for assistance with walking (6.8% in the West Bank and 2.9% in the Gaza Strip).

	WBGS	WB	GS
Bathing	10.3	15.1	8.1
Climbing stairs	5.6	8.5	4.4
Walking	4.1	6.8	2.9

Burns have a number of negative effects on the livelihoods of families through loss of work, income and even food sources. 2.6% report losing their jobs as a result of the burn. The burn injury, however, had other immediate and long term impacts on family members. As much as 18.9% report that they or a family member had to stop working to take care of the injured. In

addition, 10.7% report decline in income and 9.7% decline in food supply. Furthermore, the burned person or a family member had to stop their education in 15.9% of the cases.

In addition, some of the victims (8.7%) reported a difficulty in terms of their relation with family, neighbours, friends and other community members after coming back from treatment.

Conclusions and Recommendations

The present study is unique in many ways. It is the first study of its kind to be conducted in Palestine and possibly the Arab region. It utilised primary sources to collect data on victims from victims. The study was able to provide insights on contrasting communities in the major regions of Palestine (West Bank and Gaza Strip including urban centres, rural area, refugee camps and Bedouin communities. In addition, the study provided burn prevalence rate, distribution of burn victims and their demographics, as well as explanatory factors and conditions that contribute to the spread of burns. In general, the study makes the following overarching conclusions and provides recommendations that are provided by the experts and community members⁷ and aligned with the findings:

The Problem

Burns are a public health problem, accounting for an estimated 65,790 moderate and serious injuries during 2018. While the current study did not capture the rates and number of deaths, the data shows that non-fatal burns lead to morbidity, including prolonged hospitalization, and disfigurement and disability. As much as 16.8% report that they suffer from a disability as a result of the burn injury. Among them, as much as 30.3% are unable to use their arm/hand. One tenth of the persons with burn injury report the need (major/minor) assistance when bathing. As much as 14.8% were unable to return to normal activities, with 11.7% in the West Bank and 16.1% in the Gaza Strip. As much as 18.9% report that they or a family member had to stop working to take care of the injured. Another 8.7% suffer from stigma and discrimination.

Having reported on the magnitude, severity and primacy of the burn issue in Palestine, it is still not properly placed on the national agenda. While receiving increasing attention, the inclusion of the burn issue in the national discourse is still lacking. In addition, all experts and FGD participants, while to varying levels, stated that human and material resources allocated to dealing with the issue of burns by the Government and civil society organizations are very limited.

⁷ In the FGDs and the KIIs.

Epidemiology of Burns: Prevalence and Risk Determines

Various regional and socio-economic factors contribute to the prevalence of burns.

Region and Type of Locality

Palestinians in the Gaza Strip are at a much higher risk (at least double) than their West Bank counterparts. The Gaza Strip is exposed to a tight closure that led to a decaying infrastructure and a replenishing supply of basic goods, with a dramatic impact on human conditions especially the health of about 2 million Palestinians living there⁸. Gaza is also exposed to periodic bombardment by the Israeli army leading to thousands of fatalities and injuries, as well as mines and other firearms owned by militant groups and other individuals⁹. Gaza is also at a higher risk due to the relatively substandard living conditions with higher poverty and unemployment rates. The electricity crisis and irregular supply is causing various additional health, hygiene and burn problems¹⁰.

The situation in the West Bank, while enjoying relatively higher levels of standards, the fragmentation of the region based on the varying levels of occupation control and intrusion (versus the level of control by the PA) leads to great variations in vulnerability and fragility. Area C (under full Israeli control) comprises 60% of the West Bank and H2 (Hebron 2) houses more than 6,500 Palestinians, while the SEAM area (closed areas between the Separation Wall and the Green Line – border with Israel) houses 40,800 Palestinians¹¹. The ability to move within the West Bank and into Jerusalem is highly limited and precarious, including the ability of Palestinians to access various services including health services and those related to burn injuries.

As the data show, residents in refugee camps are most vulnerable to burns, followed by rural and Bedouin communities. The least at risk are urban centres. In addition, remote Bedouin and rural communities face additional risks of burn but also of limited tendency to seek medical assistance.

Gender

Females are the most affected by burn injuries. The data show that females comprise more than two-third of burned family members, while males comprise less than one third. Women are at a higher risk of burns, especially if they were home care-takers, who comprise 41.8% of the burned. This confirms patterns around the world that the higher risk for females is associated with their traditional roles of preparing and serving food, as well as their close proximity to various sources of fire and electricity. Women living in

⁸ United Nations, 2018.

⁹ UN OCHA, 2016.

¹⁰ UNFPA, 2017.

¹¹ UNOCHA, 'The Impact of the Barrier on Health', Special Focus, July 2010, p.4.

substandard housing are a higher risk, as they must endure open-fire cooking, unsafe cooking stoves and electric wiring. Males are at a higher risk in other open and work spaces.

Age

Along with adult women, children are particularly vulnerable to burns. Children comprise the largest group among the burned with 35.3% less than 18 years old. Children 8 or less are exposed to the more than double the risk of children between 9 and 18 (24% of burnt are 8 years or younger)¹².

Aetiology of Burns: Causes and Predisposition

There are a multitude of factors that produce and predispose toward burns in the Palestinian context. While the Israeli occupation, with its various manifestations and use of lethal weapons, is a key cause of burns. While the present study did not place focus on this factor, data on fatalities and injuries caused by bombing, tear and sound canisters, as well as mines are well-documented by a number of international organisations¹³. The qualitative data corroborate the records on international and local organisations on this issue.

The variations between regions, communities and within the same community are influenced by many other factors such as poverty, overcrowding and lack of proper safety measures at homes, especially in cases of substandard housing (including in refugee camps and Bedouin communities) are directly correlated with the risk of burns. The use of traditional and unsafe cooking appliances is also another cause. Those include the use of kerosene (paraffin) as a fuel source for non-electric domestic appliances; the use of wood for cooking; and the use of unsafe gas and electric appliances. Many families do not have adequate safety measures for liquefied petroleum gas and electricity. The presence of children (especially young girls) in crowded homes and in traditional roles such as cooking, baking of bread and care for other small children is another key factor. Families in areas that have no or limited access to rescue operations or health facilities due to remoteness from urban centres or to obstacles by the occupation are at higher risk of victimisation.

To many of the KIs and the FGD participants, the lack of or limited awareness of preventive measures contributes to risk especially for women, children and older citizens. The multiple household burdens on women (as the key home care-takers) and the many children in the household makes it difficult for

¹² Boys under 5 years of age living in low- and middle-income countries of the WHO Eastern Mediterranean Region are almost 2 times as likely to die from burns as boys living in the WHO European Region.

¹³ For example, refer to various OCHA records and other human rights organisations documenting the impact of wars on Gaza as well as the various incursions, confrontations in the West Bank.

these women to pay attention to children at all times. To experts, the use of traditional healers and healing ingredients contribute to the severity of the burns.

In the public sphere, the work place and the areas witnessing confrontations with the Israelis (such as the border areas in Gaza), as well as the use of lethal weapons on the side of the Israelis and burned tires on the side of the Palestinians lead to higher risk. Some occupations increase exposure to fire including work in factories that use chemicals and plastic (e.g., mattresses, cleaning materials, and clothing) dispose workers to higher risks. Many of these work environments do not provide sufficient security measures, with limited monitoring, supervision and legal enforcement by the responsible authorities. That said, the data indicate that most burn injuries are occurring in the HH setting, and show that the risk is greater in the household setting.

In general and as the case around mid and low-income countries, burns occur mainly in the home and workplace. Children and women are usually burned in domestic kitchens, from upset receptacles containing hot liquids or flames, or from cook stove explosions. Men are most likely to be burned in the workplace due to fire, scalds, chemical and electrical burns¹⁴.

Recommendations: Awareness, Prevention, Care and Capacity-Building

Burns are preventable. According to WHO and the data analysis provided in this study “The suffering caused by burns is even more tragic as burns are so eminently preventable. High-income countries have made considerable progress in lowering rates of burn deaths, through combination of proven prevention strategies and through improvements in the care of burn victims. Most of these advances in prevention and care have been incompletely applied in low- and middle-income countries. Increased efforts to do so would likely lead to significant reductions in rates of burn-related death and disability”¹⁵. This is also confirmed by the current study, as the majority of survey respondents, FGD participants and key informants believe that burns are preventable.

National Agenda and Policy

- Place the issue of burns at the top of the national policy and programme agenda. This might be achieved through concerted efforts by all claims-makers (including official and civil society stakeholders, as well as academic and media institutions), to increase the level of attention (*burns as problematic*) at the national and international level (donors and INGOs), using all available and

¹⁴ According to WHO, community surveys in Bangladesh and Ethiopia show that 80–90% of burns occur at home.

¹⁵ WHO, fact sheets.

potential arenas (including MoH, Parliament, medical and nursing unions, consumer protection groups, universities, as well as media outlets and social media).

- With the MoH and key private sector and non-governmental actors in the health sector, utilise the findings and recommendations of this study to turn the issue of burns from an (issue) to a (problem) through publishing scripts and summary vital results through the traditional and social media. While this is important to draw the attention of decision makers to the problem and assist in advocacy efforts, it will lead to higher levels of awareness among the public and demand for the inclusion of the problem of burns into policies, plans and budgets.

Awareness and Prevention

Awareness and prevention strategies should address the hazards for specific burn injuries, especially at the level of households with parents, and focusing on women and children. Education for vulnerable populations and training of communities in first aid must build on the premise that the majority in communities believe that burns are preventable and to do away with any fatalistic attitudes. An effective burn prevention plan should be multisectoral and include broad efforts in coordination between the various relevant ministries (Ministry of Health and Ministry of Education), other government agencies (such as the Palestinian Civil Defense), non-government organisations that work with children, women and on health related issues. It must also utilise the various media outlets, including traditional media (such the official Palestine Public Broadcasting Corporation, other local TVs and radio stations), as well as new and social media. The focus of awareness and prevention programmes should be on the following¹⁶:

- Enclose fires and limit the height of open flames in domestic environments.
- Promote safer cook stoves and less hazardous fuels, and educate regarding loose clothing.
- Apply safety regulations to housing designs and materials, and encourage home inspections.
- Improve the design of cook stoves, particularly with regard to stability and prevention of access by children.
- Lower the temperature in hot water taps.
- Promote fire safety education and the use of smoke detectors, fire sprinklers, and fire-escape systems in homes.
- Promote the introduction of and compliance with industrial safety regulations, and the use of fire-retardant fabrics for children's sleepwear.
- Avoid smoking in bed and encourage the use of child-resistant lighters.

¹⁶ As stipulated by WHO best practices around the world and applicable in Palestine.

- Promote legislation mandating the production of fire-safe cigarettes.
- Improve treatment of epilepsy, particularly in developing countries.
- Encourage further development of burn-care systems, including the training of health-care providers in the appropriate triage and management of people with burns.
- Support the development and distribution of fire-retardant aprons to be used while cooking around an open flame or kerosene stove.

Medical Care and First aid:

- Increase the scope and quality of medical care in the various regions of the WBGS;
- Reinforce and capacitate the referral system;
- Increase the skills of local doctors and community medical workers;
- Continue to capacitate the existing burn units in hospitals and further support burn mobile clinics to reach remote and marginalized areas.
- Provide awareness among community members and health workers of the basic guidance on proper first aid for burns.
- Raise awareness of the need to avoid traditional healers by showing the competency of the existing health services in clinics and hospitals.
- Raise awareness on the need to educate the public through the Ministry of Health and its workers to refrain from using any medications or materials that cover the injury, which might lead to further complications.

Box 4: Specific Prevention and First Aid Recommendations

Based on global experience and study findings, the following are specific recommendations on what to do or not do for first aid in case of burn that might be used to capacitate community medical workers and as messages in public awareness promotion:

What to do

- Stop the burning process by removing clothing and irrigating the burns.
- Extinguish flames by allowing the patient to roll on the ground, or by applying a blanket, or by using water or other fire-extinguishing liquids.
- Use cool running water to reduce the temperature of the burn.
- In chemical burns, remove or dilute the chemical agent by irrigating with large volumes of water.

- Wrap the patient in a clean cloth or sheet and transport to the nearest appropriate facility for medical care.

What not to do

- Do not start first aid before ensuring your own safety (switch off electrical current, wear gloves for chemicals etc.)
- Do not apply paste, olive oil, salt, honey or raw cotton to the burn.
- Do not apply ice because it deepens the injury.
- Avoid prolonged cooling with water because it will lead to hypothermia.
- Do not open blisters until topical antimicrobials can be applied, such as by a health-care provider.
- Do not apply any material directly to the wound as it might become infected.
- Avoid application of topical medication until the patient has been placed under appropriate medical care.

Capacity-Building

- Support and capacitate the existing burn units in the hospitals that have such units by increasing the numbers and skills of health workers;
- Establish new units that cater to remote areas including mobile clinics;
- Develop and use of a national burn registry with harmonized data collection on burns and increased collaboration between local and national networks to increase the number of effective programmes for burn prevention.

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Annexes

Annex 1: Detailed Sample Selection

The research was implemented within selected governorates in West Bank and Gaza Strip. They were therefore be selected purposively; but households within each community was selected using a randomized systematic approach. A multi stage stratified sample using probability proportional to size was used as a sampling approach within the selected *governorates (communities)*. In this case, the first stratum is the *governorate* and the second stratum the locality (or equivalent). AWRAD used the results of latest population census as its *sampling frame to map out all the targeted localities in the governorate including population size in each.*

- ▶ In Palestine, this research covered both the West Bank and Gaza, with three contrasting sites in each territory consisting of 250 households; thus a total of 750 households in West Bank and 750 in Gaza (for a total of 1,500).
- ▶ The following sites were selected to capture the contrasting nature of Palestinian realities in terms of region, level of urbanisation/ruralisation taking into consideration the Bedouin communities, distance from urban centers, refugee status, proximity to the Separation Wall in the West Bank and the borders in Gaza.
- ▶ The exact sites for conducting the community surveys were discussed and agreed upon by the MoH-led steering committee on burns in each region.

West Bank Communities

Target community	Description
Hebron city	Urban Region (South) Population: 201,063
Nablus Region	Collation of refugee camps (close to urban centre) Balata camp Askar camp Ein Beit Alma Region (North) Population: 29,627

Jordan Valley and Eastern Rift (Including Jericho and Tubas Governorates)	Collation of villages/some with Bedouin background- Area C, near settlements and the Wall: Bardala (Tubas) Tammoun (Tubas) Ein Albeidah (Tubas) Aqqaba (Tubas) Zbeidat (Jordan Valley/Jericho) Jiftlik (Jordan Valley/Jericho) Al Ouja (Jordan Valley/Jericho) Aqbat Jabr refugee camp (Jordan Valley/Jericho) Region (Middle and North East) Population: 43,064
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Gaza Strip Communities

Target community	Description
Gaza city	Urban Region (South) Population: 590,481
Jabaliya North region	Collation of rural/Bedouin communities (close to boarder) Beit Hanoun Beit Lahya Um Al Naser (Bedouin village) Region (North) Population: 146,812
Gaza Middle/South	Collation of refugee camps (largest refugee population) Al Nuseirat camp Al Burij camp Al Maghazi camp Region (Middle/South) Population: 77,928

The following specific process was utilized for the selection of the sample in the West Bank and Gaza:

- ▶ **Regions:** In each of the West Bank and Gaza, 750 questionnaires were assigned, as per the terms of reference. The total sample of 1500 yields a margin of error (plus/minus) = 2.5% (at a 95% level of confidence and a response distribution (p=50%). The non-response rate is estimated at 3% based on previous experience.
- ▶ **Contrasting communities:** Each community was allocated 250 questionnaires distributed in the sub-communities (locality). Each locality will be assigned a number of questionnaires proportional to its population size.
- ▶ **Primary Sampling Units (PSUs):** Each locality was divided into sampling units with the use of existing maps that detail neighborhoods, streets, and housing units. Each locality is divided into a number of sampling units with about 100 households each.
- ▶ A probability proportional sample of 150 Primary Sampling Units (PSUs) was determined through maps of the localities selected.

- ▶ From each PSU, households were selected using a systematic random sampling process, using fixed interval (1 out of 10). An average of 10 households was sampled per PSU providing for a total sample of 1500 households.
- ▶ **Households:** In coordination with central and regional supervisors, the field teams used the maps to allocate the households approached. These households were selected according to a sampling interval (number of households in the sampling unit divided by required number of interviews).
- ▶ **Gender:** The selection of the respondent was based on the ability of this person to represent the household; his/her knowledge of the issue of burns and its relation to his/her own family. In addition, this person must have the ability to make decisions within the context of the family in view of their role in deciding the appropriate recourse in the case of burns.
- ▶ The actual sample distribution is detailed in the following Table.

Governorate	Locality	Frequency	Percentage	Gender of Head of HH	Frequency	Percentage
Gaza City	Gaza City	250	16.7%	Male	462	30.8%
Gaza Middle	Al Burij camp	92	6.1%	Female	1038	69.2%
	Al Maghazi camp	81	5.4%	Type of Locality	Frequency	Percentage
	Al Nuseirat camp	77	5.1%	City	754	5.03%
Gaza North	Beit Hanoun	90	6.0%	Village	198	13.20%
	Beit Lahya	80	5.3%	Refugee Camp	497	33.10%
	Um Al Naser (Bedouin village)	80	5.3%	Bedouin Community	51	3.40%
Jericho/Tubas	Aqbat Jabr	20	1.3%	Type of Family	Frequency	Percentage
	Jericho	59	3.9%	Nuclear	1302	86.80%
	Aqqaba	40	2.7%	Extended	198	13.20%
	Jiftlik	20	1.3%	Education of HH		
	Ein Albeidah	20	1.3%	Illiterate	129	8.60%
	Ras Al Ouja	15	1.0%	Elementary	262	17.50%
	Tammoun	40	2.7%	Preparatory	346	23.10%
	Al Khan Al Ahmar	16	1.1%	Secondary	381	25.40%
	Zbeidat	20	1.3%	2-year college	122	8.10%
Nablus	Askar camp	100	6.7%	University	260	17.30%
	Balata camp	130	8.7%			
	Ein BetElma camp	20	1.3%			
Hebron	Hebron City	250	16.7%			
	Total	1500	100.0%			

Annex 2: Description of FGDs

#	City/ Locality	Target group	# of participants	# females	#males
West Bank					
1	Rafidia Public Hospital, Nablus	Nurses	4	1	3
2	Ras El Oouja, Jordan Valley	Women caregivers	8	8	-
3	Ibn Sina Nursing College, Nablus	Trainers on Burns	3	1	2
4	'Askar Refugee Camp, Nablus	Women	10	10	-
5	Allstiqal Association for Media and Development, Hebron	Representatives of Institutions	14	13	1
6	Old city, Hebron	Women caregivers	21	21	-
Gaza Strip					
7	Zeina Co-op, Bedouin village	Women caregivers	15	15	-
8	Khan Younes	Nurses, social workers, health community workers, first aid workers	14	4	10
9	Nashet Association - Gaza City	Community leaders	11	6	5
10	Bunyan Association – Gaza City	Nurses, social workers, health community workers	11	5	6
11	Rehabilitation and Social Training Association – Nuseirat Camp	Mixed group (parents)	18	14	4
12	Al Bureij Refugee Camp – Boarder area	Women caregivers	24	24	-
Total			153	98	55

Annex 3: List of Interviewees

#	Name	Organization	Position	Region
1	Amal Abu Awad	Ministry of Health and Ibn Sina College	General Director of the Health Education Department – MoH; Dean Ibn Sina College for Health Sciences	Ramallah - Nablus
2	Mohammad Qteit	Princess Alia Governmental Hospital	Physician - Head of the Burns Treatment Unit	Hebron
3	Sahar Qawasmi	Widad Nassereldein School and Hebron Municipality	Principal of the School – Elected Member of the Municipality	Hebron
4	Sumaya Samirat	Al'Islah Charitable Society	Coordinator – Community Outreach Programme	Jericho
5	Anas AbuSaffa	Rafidia Public Hospital	Physician – Head of the Burns Treatment Unit	Nablus
6	Hassan Hamdan	Nasser Hospital	Physician - Head of the Burns Treatment Unit	Khan Younes - Gaza
7	Bilal Ayyash	Nasser Hospital	Physician	Khan Younes - Gaza
8	Bashar Murad	Palestine Red Crescent Society (PCRS)	Vice President of PRCS, Gaza Branch	Gaza
9	Mahmoud Bassal	Ministry of Health, Health Work Committees, and Al Quds Hospital	Burns Specialist and Plastic Surgeon	Gaza
10	Mohammad AbuShakyan	Nuseirat Municipality	Mayor	Middle - Gaza