

Disrupting global commitments to eradicate poverty and hunger: Covid-19 and its effects on adolescent physical and mental health in Jordan and Palestine

Bassam A. Abu Hamad^{1*}, Nicola A. Jones², Eric D. Neumeister³, and Agnieszka M. Małachowska⁴

Sustainable Development Goals (SDGs) 1 and 2 aim to eradicate poverty and hunger in all their forms. However, the onset of the Covid-19 pandemic and subsequent lockdowns has disrupted progress toward achieving these goals. Despite considerable attention to the effects of the pandemic on poverty and food insecurity, there has been much less attention to the experiences of forcibly displaced adolescents during Covid-19 lockdown measures. This article addresses this evidence lacuna by drawing on mixed-methods data collected through phone-based surveys ($n = 4,319$) and in-depth qualitative interviews ($n = 191$) carried out in 2020 with adolescents (aged 12–19 years) from host and refugee communities in Jordan and Palestine. We also examine whether social protection has been able to mitigate the worst effects of food and economic insecurity on adolescents from host and refugee communities. Descriptive and inferential analysis of the quantitative data was conducted using Stata 16. The qualitative interviews were recorded, transcribed, and thematically coded using MAXQDA 12 software. We found that a significant proportion of adolescents experienced reduced diet diversity and food insecurity during the Covid-19 lockdown in autumn 2020 in both Jordan and Palestine. Adolescents with the worst economic and food security outcomes also had poorer self-reported physical health, lower resiliency scores, and higher levels of anxiety and depression. In Palestine, social protection measures contributed less to mitigating the negative consequences of the pandemic, whereas in Jordan—largely due to higher transfer amounts—social protection was more significant in mitigating these negative health and well-being consequences. Priority actions for getting adolescent-related SDGs back on track include scaling up emergency-responsive and age- and gender-sensitive social protection, especially for the most disadvantaged young people, including adolescents with disabilities, married girls, adolescents out of school, and young people from refugee households living in host communities, where packages of support are typically more disparate.

Keywords: Adolescent, Poverty, Intersectional, Food insecurity, Covid-19, Health, Mental health, Social protection, Jordan, Palestine

Introduction

Sustainable Development Goals (SDGs) 1 and 2 articulate a global commitment to eradicate poverty and hunger in all their forms, everywhere. However, the Covid-19 pandemic and associated lockdowns have presented the global community with its greatest obstacle yet to achieving these goals, as the crisis has caused the first rise in extreme poverty in a generation and threatens to double the amount of people experiencing acute hunger [1–4].

Sustained access to robust social protection is crucial to maintaining food and economic security for vulnerable populations, contributing directly to 6 targets within SDGs 1 and 2 (see **Table 1**). While considerable attention has been paid to the effects of the pandemic on household-level poverty and food insecurity [5–7], there has been much less attention to the specific effects on adolescents. This is despite recognition that the second decade of life is a critical juncture in terms of physical and mental health maturation—a time when the negative effects of poverty and poor nutrition could have both immediate and longer term effects [8–11].

Adolescent vulnerabilities during the Covid-19 pandemic

Poverty and food insecurity

Globally, Covid-19 has intensified pre-existing vulnerabilities affecting young people's physical and mental well-

¹ Al-Quds University, Gaza, State of Palestine

² Gender and Adolescence: Global Evidence (GAGE), and ODI, London, UK

³ Gender and Adolescence: Global Evidence (GAGE), London, UK

⁴ Gender and Adolescence: Global Evidence (GAGE), GAGE MENA, Poland

* Corresponding author:
Email: ghsrcb@gmail.com

Table 1. Overview of sustainable development goals (SDGs) 1 and 2 commitments to tackling poverty and hunger and promoting social protection for all

Goals	Targets
End poverty in all its forms everywhere	1.1 By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than US\$1.25 a day
	1.2 By 2030, reduce at least by half the proportion of men, women, and children of all ages living in poverty in all its dimensions according to national definitions
	1.3 Implement nationally appropriate social protection systems and measures for all, including floors, and by 2030 achieve substantial coverage of the poor and the vulnerable
	1.5 By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social, and environmental shocks and disasters
End hunger	2.1 By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious, and sufficient food all year round
	2.2 By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women, and older persons

Source: United Nations [12].

being. In 2020, the number of children living below their country's national poverty line rose by 142 million—which means that globally, nearly 40% of children are living in poverty. Poverty has negative impacts on young people's lives, ranging from health to child marriage. A UNICEF report [13] predicts that the economic uncertainty resulting from Covid-19 lockdowns is likely to contribute to more than 9 million more children under 5 years old suffering from wasting by the end of 2022 and up to 10 million girls put at risk of early marriage due to economic uncertainty and loss of learning. Pandemic-related lockdown measures have severely curtailed people's access to adequate food supplies. Stressed supply chains have led to price increases, while lockdown measures have limited people's ability to earn income, leading to widespread food insecurity in low- and middle-income countries (LMICs) [14–16], especially in South Asia and sub-Saharan Africa, where urban households have often been hardest hit [17]. Moreover, the literature suggests that closures of schools during Covid-19 lockdowns had interrupted school feeding programs, which can help to ensure child food security [18]. Additionally, school closures and lack of education at the long run, aggregate poverty level, are a major predictor of passing poverty from one generation to the next [19].

In Jordan, a 2020 cross-sectional survey found that just 40% of households were food secure after lockdown measures took effect, while 36% of households were moderately food insecure and almost 1 in 4 were severely food insecure [7]. A similar survey in Bangladesh found that after the first month of lockdown measures (i.e., in April 2020), an astonishing 90% of households experienced some degree of food insecurity, compared to 56% before the pandemic, in 2018 [20]. In Palestine, in 2020, gross domestic product (GDP) per capita declined by 14% and public debts increased by 24% (compared to 2019),

putting further pressure on households already struggling to meet basic needs, who suffered an immediate drop in their income due to Covid-19 [21].

Psychosocial outcomes

Mental health services for children and adolescents have been disrupted in more than 80 countries, and in 4 of 5 countries, school mental health services were interrupted too [13]. This reduction occurred as stress factors multiplied, with adolescents around the world reporting increased stress and anxiety [13]. This has in turn led to depressive symptoms, with girls typically resorting to risky behavior and boys to substance abuse [22].

Consequences of displacement

As of 2022, of the 1.3 million Syrian refugees in Jordan and 2.1 million refugees in Palestine, around 22% are adolescents [23, 24]. Displacement has compounded the negative effects of lockdown measures on mental health [25], and refugees are at significantly greater risk of losing income-generation opportunities due to economic shocks [26]. In camp settings, outcomes can vary based on responsible agencies' Covid-19 response protocols and resourcing levels. Where universal food support programs are relatively well resourced (e.g., in Jordan), children and adolescents enjoy greater food security [27], but in camp locations, where capacities are more stretched (such as in Palestine), children and adolescents are at greater risk of malnutrition, which can have long-term health consequences [28, 29].

Social protection programs

Robust social protection programs can mitigate the economic consequences of the pandemic at the household level, preventing negative health outcomes for young people. Evidence shows that social protection can be crucial to

reducing child poverty during economic shocks [30, 31]. While evidence about the role of social protection in mitigating the negative physical and mental health effects of the pandemic is still emerging, the evaluation evidence of social programming more broadly—including cash transfers—underscores that such interventions can significantly improve young people's mental health by reducing stress [32–35]. They can also mitigate the negative mental health consequences brought on by pandemic conditions [22, 36]. Cash transfer programs have also been found to make positive contributions to children's and adolescents' physical health by limiting risky behavior, reducing substance abuse, and improving nutrition [37–39].

Covid-19 in Jordan and Palestine

Following the first reported cases of Covid-19 in Palestine and Jordan in March 2020, a state of emergency was declared and lockdown measures were instigated, which included curfews, restrictions on movement within and across governorates, and closure of institutions and businesses [27, 40]. In Gaza, Palestine, these measures were intensified in August 2020 when community transmission started and continued until late October 2020. Then, during November and December 2020—when data collection took place in Palestine—night curfews were imposed, and social distancing policies continued through the end of 2021. In Jordan, because the strict lockdown was beginning to take a serious toll on the economy, the government started to relax restrictions, and in mid-September 2020, case numbers began to rise sharply and continued to do so into the first quarter of 2021. In March 2021, the government tightened up restrictions and moved children back to online learning.

Objectives

The research on which this article is based is part of the Gender and Adolescence: Global Evidence (GAGE) 9-year longitudinal research program exploring the gendered experiences of adolescents aged 10–19 years. Our main objective was to explore adolescent food insecurity experiences during Covid-19 lockdowns, with a particular focus on the ways in which gender, stage of adolescence, disability, and marital status shaped these experiences. The study assessed the consequences of food insecurity on adolescents' physical and mental health. Moreover, it investigated the social protection assistance provided to adolescents and their families during the pandemic and how these programs have contributed to mitigating the negative effects of lockdown on adolescents' food insecurity and subsequently their physical and mental well-being. The overarching purpose of this study was to inform policies and programming to meet the needs of adolescents during and after the pandemic.

This article begins by situating our findings in the broader literature, underscoring the dearth of evidence from settings affected by forced displacement. We then describe our methodology. The Results section discusses our findings on the consequences of the pandemic and lockdowns on adolescent experiences of poverty and food

insecurity, and how this has influenced their physical and mental health. We also discuss the extent to which access to social protection has been able to mitigate these consequences. This article concludes with a discussion of the implications of our findings for policy and programming.

Data and methods

This article goes some way to addressing the evidence lacuna on the pandemic's impacts on adolescents' physical and mental health by drawing on mixed-methods data collected through phone-based surveys ($n = 4,319$) and in-depth qualitative interviews ($n = 191$) carried out in 2020 with adolescents (aged 12–19 years) from host and refugee communities, as well as key informant interviews in Jordan and Palestine. Quantitative data collection involved a telephone survey conducted in Jordan between October and December 2020, with 3,314 adolescents aged 12–19 and their caregivers, almost equally distributed between boys and girls (see **Table 2**). In Palestine, we conducted telephone surveys with 1,005 adolescents and their caregivers from the West Bank and Gaza, equally distributed between both territories.

We used the telephone-based survey to measure food security levels and to assess adolescents' physical and mental health and well-being. The survey also included questions on household income, social protection programs provided during Covid-19, and the perceived impacts of Covid-19 on the health and psychosocial well-being of adolescents (see the GAGE website for the survey instruments) [41]. Our survey measured anxiety using the Generalized Anxiety Disorder (GAD-7) scale. A score of 10 or above indicates moderate-to-severe anxiety. Also, we assessed depression (as part of the telephone survey) using the Patient Health Questionnaire (PHQ-8), a short screening tool for depression, which scores respondents on a scale of 1–24. A score of 10 or above indicates moderate-to-severe depression. Moreover, to measure coping and resilience levels, we used the Brief Resilient Coping Scale (BRCS), a 4-item scale (0–16) that measures tendencies to cope with stress in a highly adaptive manner. A score of between 0 and 9 indicates low resilient coping and a score of between 13 and 16 indicates high resilient coping. We used the quantitative data to precisely identify differences in exposure to food insecurity and psychosocial well-being levels in relation to the provisioning of social assistance. Also, we asked participants how their experiences and vulnerabilities have changed during the Covid-19 lockdowns.

To add nuance to the quantitative survey findings and capture changes experienced by adolescents as the pandemic progressed, we also carried out 2 rounds of qualitative virtual fieldwork, between May and June 2020 and between September 2020 and January 2021. This allowed us to explore, in depth, the lived experiences of adolescents during lockdowns and to collect rich data from particularly vulnerable categories, such as adolescents with disabilities, married young girls, and school dropouts. Qualitative data allowed us to better understand and interpret the quantitative findings and helped to inform the further development of quantitative tools. Discussions

Table 2. Description of study participants

Variable	Palestine (1,005)		Jordan (3,314)	
	<i>N</i>	%	<i>N</i>	%
Quantitative part				
Gender				
Male	509	50.6	1,651	49.8
Female	496	49.4	1,663	50.2
Age				
12–14	400	39.8	1,520	45.9
15–19	605	60.2	1,794	54.1
	Mean 12.27	Median 15	Mean 15.43	Median 14
District				
West Bank	500	49.8		
Gaza	505	50.2		
Nationality (in Jordan)				
Jordanian			405	13.7
Syrian			2,274	77.1
Palestinian			230	7.8
Other nationalities			42	1.4
Location of living (for Palestine)				
Living in a refugee camp	297	29.6		
Living outside a refugee camp	708	70.4		
Refugee status (for Palestine)				
Registered refugee	485	48.3		
Nonrefugee	520	51.7		
Place of living (for Jordan)				
Informal tented settlement			272	8.2
Host community			1,952	58.9
Camp community			1,090	32.9
Disability				
Having a functional disability	93	15.4	502	17.2
Not having a functional disability	512	84.6	2414	82.8
Marital status				
Ever married	98	9.8	207	7.0
Never married	906	90.2	2,735	93.0
Enrollment in education pre-Covid-19				
Yes	788	78.4	2,125	72.0
No	217	21.6	826	28.0
Married adolescent lives with in-laws/extended family (in Palestine <i>N</i> = 97, in Jordan <i>N</i> = 190)				
Yes	34	35.1	102	53.7
No	63	64.9	88	46.3

(continued)

Table 2. (continued)

Variable	Palestine (1,005)		Jordan (3,314)	
	N	%	N	%
Qualitative part				
Girls aged 12–14	15		16	
Boys aged 12–14	14		15	
Girls aged 15–19	29		21	
Boys aged 15–19	19		16	
Married girls	9		14	
Adolescents with disabilities	15		8	
Key informants	23		20	

with adolescents enabled us to assess how Covid-19 had impacted them, according to their own perceptions. In Jordan, we interviewed 68 adolescents aged 12–14 years and 17–19 years, including 14 married girls and 8 adolescents with disabilities. In Palestine, we interviewed 80 adolescents from both age cohorts, including 9 married girls and 15 adolescents with disabilities. In both contexts, we also interviewed key informant experts from education, public health, and social services—20 in Jordan and 23 in Palestine.

Data analysis

Cleaning and analysis of the quantitative data were conducted using Stata 16. Descriptive analysis was conducted first, followed by inferential analysis to explore the relationships between the study variables, including exploring differences by characteristic variables such as place of residency, gender, and refugee status. *P* value was considered as statistically significant when it equaled or fell under 0.05. The qualitative interviews were carried out in Arabic by local researchers and recorded, transcribed, and translated. They were then thematically coded based on the GAGE research program's conceptual framework [42]. Coding was completed using MAXQDA 12 software. During qualitative data analysis, care was taken to identify themes that resonated beyond individuals and across the cohort or specific subgroups of adolescents within it; the selected quotes are used to illustrate these insights.

Ethics

The research followed the international code of ethics, and permissions were sought and granted from Gaza's Helsinki Committee and the Ministry of Interior in Gaza. Research ethics approvals were also obtained from Al-Quds University and George Washington University. Informed consent was obtained from participants aged 18 years and above, and verbal and written assent was sought for those under 18 years, as well as verbal consent from their caregivers (typically the primary female caregiver). Enumerators were oriented on how to interact with adolescents in an age- and gender-responsive way.

Limitations of the study

It is important to point out some limitations of our data and analysis. As with other cross-sectional surveys, this study takes a snapshot of the situation at a point in time; however, the qualitative work included engaging with adolescents over different rounds of data collection. Self-reported measures may contribute to recall bias as participants are sometimes unable to describe their experiences, feelings, and attitudes accurately. The absence of baseline readings prior to Covid-19, and of a control group, made it difficult to precisely attribute the study findings to the consequences of the pandemic, and as such, the role of other confounders cannot be excluded. Nevertheless, participants in both the qualitative and quantitative components were requested to indicate how much their vulnerabilities—as well as the social protection support, they received—had changed since the onset of Covid-19. Thus, the responses are indicative of perceived impacts rather than causal relationships. Another limitation is that phone-based interviews are, by necessity, shorter than face-to-face interviews, which limits the depth of information that can be elicited. Participants may also have had limited privacy during the phone calls, particularly girls living in camps. However, the research team had received training to address such challenges. That said, the use of mixed-methods data helps to overcome these limitations.

Results

In this section we present our mixed-methods findings and include summary tables of key statistical findings. More details are included in supplementary tables.

Sample characteristics

In Jordan, more than 3-quarters of adolescents (77%) in the sample were Syrian refugees (see **Table 2**), 13% were vulnerable Jordanian adolescents, and 8% were Palestinian refugees. More than half of the participants (59%) were living within host communities, 33% in refugee camps, and 8% in informal tented settlements. In keeping with the 2030 Agenda for Sustainable Development and its call to leave no one behind, we oversampled particularly vulnerable adolescents, including adolescents with

disabilities (17%), girls married as children (7%), and adolescents who had dropped out of school prior to the onset of Covid-19 (28%).

In Palestine, just under a third of adolescents (30%) were living in refugee camps, while the rest were living outside camps (see **Table 2**). As in Jordan, we oversampled particularly vulnerable adolescents: adolescents with disabilities (15%), girls married as children (10%), and adolescents who had dropped out of school prior to Covid-19 (22%). More details about the sample characteristics are provided in **Table 2**.

Food insecurity during the Covid-19 pandemic

Our quantitative findings point to serious food insecurity levels during the Covid-19 lockdowns in the last quarter of 2022. Almost all households surveyed (94% in Palestine and 95% in Jordan) reported that many families in their community could not afford to buy enough food or were changing what they eat (see **Table 3**). A 15-year-old girl in Gaza explained that:

Since the coronavirus outbreak, we cook once and the meal lasts for three days . . . This is because of the problem of salaries . . . We suffer from financial challenges since my father retired and his salary decreased, but the issue is worse this month because he did not receive the salary [pension] at all.

Similarly, a 17-year-old Syrian refugee girl living in a host community in Jordan emphasized that:

Many things have changed . . . since the pandemic started, including lack of money. We can't buy anything, and the prices of vegetables and fruits increased dramatically . . . Before the quarantine, my husband and his brother were working in the market . . . Now, the shops are closed and their salaries have stopped.

However, nonrefugees and refugees living in camps were less likely to report experiencing food insecurity (see Table S1).

As **Table 3** shows, one-third (33%) of households in Palestine (though as many as 58% in Gaza) and 56% in Jordan were unable to buy essential food items in the 7 days preceding the survey. Due to the lack of resources, many families reported cutting back on meals served to boys: 50% in Jordan, predominantly among refugees, and 28% in Palestine. There were similar figures for cutting back on meals served to girls (46% in Jordan and 27% in Palestine; see **Table 3**). These findings resonate with the qualitative interviews. For example, a 12-year-old Jordanian boy from Mafraq governorate emphasized that:

It [coronavirus] affected everything . . . There is no food, bread or anything to drink. There is nothing . . . We depend on God . . . No one is working in my family . . . My father had his leg amputated, we depend on assistance [from Jordan's National Aid Fund] . . . If I want to eat, I need to go with my mother to the public kitchen.

Our quantitative data show that around a quarter of adolescents (24% in Palestine and 26% in Jordan) reported that they experienced hunger because there was not enough food to eat at least once during the past 4 weeks (see **Table 3**). These findings were also echoed in the qualitative interviews. For instance, a 16-year-old girl living in Jerash Palestinian refugee camp in Jordan noted that:

I feel so frustrated by our condition at home and the challenges we face during this lockdown . . . What is most frustrating is that we do not even have enough resources to eat lunch any more.

The proportion of adolescents reporting experiencing hunger in the 4 weeks prior to the survey was significantly higher in Gaza (40%) than in the West Bank (6%; see Table S1). A 16-year-old refugee girl from Gaza highlighted that not being able to afford food was a major source of stress for her and her family.

Table 3. Caregivers' and adolescents' experiences of food insecurity during Covid-19

Caregivers' Experiences of Food Insecurity	Palestine		Jordan	
	Number	%	Number	%
Families cannot afford to buy enough food to eat or are changing what they eat	733	93.7	2,442	94.5
Cut back on meals served to boys in household (HH)	261	27.9	1,506	50.0
Cut back on meals served to girls in HH	254	27.2	1,394	46.3
HH was unable to buy essential food items in past 7 days	311	32.7	1,656	55.9
Adolescents' experiences of food insecurity				
Experiencing hunger in the past 4 weeks	236	23.6	769	26.1
Experiencing hunger more often in past 4 weeks due to Covid-19	147	14.7	431	14.6
Adolescent's meals less likely to contain protein	317	31.6	1,257	42.6
Adolescents decreased the consumption of vitamin A-rich vegetables/fruits	280	29.7	1,057	35.8

It has affected us severely and negatively. We have so little food that we cannot even cover basic daily needs My mother wants to cook but because my father's work has stopped, he can't meet the expenses of the house This causes fights among them We can't eat meat, fish or fruit, and we have very limited vegetables too.

In both Jordan and Palestine, adolescents with disabilities were more likely to report experiencing hunger in the past 4 weeks compared to their peers without disabilities (31% vs. 25% in Jordan and 33% vs. 23% in Palestine), and the differences by disability status were statistically significant (see Table S1). For example, an 11-year-old refugee girl in Gaza with a physical disability noted that:

The lockdown is very difficult for our family We are only looking for God's blessing We get the food supplies box [from the United Nations Relief and Works Agency for Palestine Refugees in the Near East, UNRWA] every quarter but the box only lasts us for one month Then we have to wait. No other institutions contacted us to provide help.

Differences by age were inconsistent; in Palestine, older adolescents were more likely to report experiencing hunger (25%) than younger ones (22%), while in Jordan, younger adolescents (30%) were more likely to report experiencing hunger than older ones (22%), and the differences were statistically significant.

Also, refugees in Palestine were more likely to report experiencing hunger in the past 4 weeks than nonrefugees (29% vs. 18%) and the differences were statistically significant. Other correlates such as gender, marital status, or living in a camp versus living outside of camps did not reveal statistically significant differences. In Jordan, adolescents living in host communities (30%) and those living in informal tented settlements (26%) were more likely to report experiencing hunger than their peers living in camps (18%), with the differences statistically significant (see Table S1).

Moreover, 15% of adolescents in the 2 contexts indicated that they had been hungry more often during the lockdown in the autumn of 2020 (see Table 3). Table S1 shows that adolescents with disabilities in Palestine (33%) and Jordan (31%) were more likely to report experiencing hunger in the past 4 weeks than their peers without disabilities (23% in Palestine and 25% in Jordan), and the differences by disability status were statistically significant. Similarly, refugees in Palestine were more likely to report experiencing hunger in the past 4 weeks than their peers who were not refugees (29% vs. 18%) and the differences were statistically significant. In terms of gender-specific vulnerabilities, ever-married girls were more likely to report experiencing hunger (28% in Palestine and 27% in Jordan) than their never-married peers (23% in Palestine and 26% in Jordan). While differences were not statistically significant, our qualitative findings underscored that married adolescent girls faced considerable

challenges in meeting basic food needs for themselves and their families. An 18-year-old married girl from Jordan, with an infant daughter, explained these difficulties:

After corona[virus], we stopped bringing expensive foods, we bring meat very rarely. And we can afford only very limited fruits and vegetables We depend on simple food such as soup, lentils and beans I struggle to afford milk formula for my baby daughter My husband stopped work. There is no income.

Our findings suggest that adolescents had less dietary diversity due to the pandemic; 32% of adolescents in Palestine (39% in Gaza and 25% in the West Bank) and 42% in Jordan reported consuming less protein during the pandemic. Similarly, 30% of adolescents in Palestine and 36% in Jordan reported eating less fruit and vitamin A-rich vegetables. In general, in both Jordan and Palestine, adolescents who were more likely to consume a diverse diet (including protein and vitamin A-rich fruit and vegetables) were girls, the older cohort, nonrefugees, and adolescents without disabilities (see Tables 3 and S1).

Consequences of food insecurity on perceptions about physical and mental health

When asked about their overall health status, 91% of adolescents surveyed in Palestine and 81% in Jordan reported their health as either "good" or "very good." Nevertheless, 12% of girls in Palestine and 14% in Jordan said that they felt their health was worse since the onset of the pandemic, with 10% of boys in Palestine and 15% in Jordan reporting the same (see Tables 4 and S2).

Among adolescents who reported experiencing hunger in the past 4 weeks, 27% (in both locations) perceived that their health status had worsened during the pandemic, with statistically significant differences compared to those who did not report experiencing hunger. Our survey findings indicate that adolescents in Palestine who had experienced hunger in the past 4 weeks reported less positive perceptions about their health (82% reported "good" or "very good" health) compared to those who did not report experiencing hunger (94%), with statistically significant differences among the 2 groups. Similarly, adolescents in Jordan who had experienced hunger in the past 4 weeks reported less positive perceptions about their health (68% reporting "good" or "very good") than those who had not experienced hunger (85%), with statistically significant differences. Moreover, as Table S2 shows, in Palestine, adolescents in households who reported being unable to buy essential food items in the past 7 days reported significantly less positive perceptions about health (83%) than their counterparts (95%) who were able to secure essential food, with statistically significant differences; figures reported in Jordan were very similar (78% and 84%, respectively), also with statistically significant differences.

To assess coping and resilience, we used the BRCS. Our findings demonstrate that 33% of adolescents in Jordan and 23% in Palestine (37% in Gaza) were considered to have low resilience. Adolescents who experienced hunger

Table 4. Consequences of food insecurity on perceptions about physical and mental health

Characteristics of Adolescents	Palestine			Jordan		
	Number	%	P Value	Number	%	P Value
Adolescent self-reported health—good/very good	912	90.7		2,375	80.5	
• Experiencing hunger in the past 4 weeks—self-reported health—good/very good	194	82.2	0.001*	521	67.8	0.001*
Adolescent self-reported health worsened after Covid-19	113	11.2		422	14.3	
• Experiencing hunger in the past 4 weeks—self-reported health worsened after Covid-19	64	27.1	0.001*	64	27.1	0.001*
Experiencing hunger in the past 4 weeks	236	23.6		769	26.1	
• GAD-7 score ≥ 10 (moderate-to-severe anxiety)	59	25.1	0.001*	155	20.2	0.001*
• PHQ-8 score ≥ 10 (moderate-to-severe depression)	28	11.9	0.001*	164	21.3	0.001*
• Low resilient coping (BRCS 0–9) yes	68	29.1	0.017*	266	34.6	0.732

GAD = generalized anxiety disorder; PHQ = patient health questionnaire; BRCS = Brief Resilient Coping Scale.

*Statistically significant $P < 0.001$.

in the past 4 weeks were more likely to have low resilience than those who had not experienced hunger, in both locations, with statistically significant differences (in Jordan, 35% vs. 31%; in Palestine, 29% vs. 22%; see **Table 4**). Moreover, our survey measured anxiety using the GAD-7 scale and revealed a strikingly high prevalence of moderate-to-severe anxiety among adolescents who reported experiencing hunger in the past 4 weeks in Jordan (20%) and Palestine (25%), compared with their peers who had not experienced hunger (6% in Jordan and 10% in Palestine). The qualitative interviews further highlighted that anxiety often centered on thwarted opportunities for the future, particularly among older adolescents. A 16-year-old out-of-school boy from the Gaza Strip explained his situation:

Honestly, the situation is very bad. I don't have any freedom . . . I spend on my father, not the other way around. Because he can't work . . . I have no freedom to go out with my friends, to make a life, a future. To work and save money, to build a house and get married . . . Instead, I go to work, then go home to avoid the shame of my father having to spend on me because he can't work.

Older adolescents participating in focus group discussions in Jordan and Palestine also reported several youth suicides in their neighborhoods. A 17-year-old refugee boy from Gaza reflected that young people's suicidal tendencies probably reflect the perceived inability to effectively manage household responsibilities (which they often shoulder from a young age), in the context of protracted chronic poverty and unemployment, exacerbated by the Covid-19 shock:

Today, we wake up and know about the catastrophic death of an 18-year-old young boy in Khanyounis, he hanged himself by a chain. I think a guy his age must carry a responsibility greater than him. For example, his father is dead or disabled, or sick . . .

We assessed depression using the PHQ-8. Among adolescents who reported experiencing hunger in the past 4 weeks, 21% in Jordan and 12% in Palestine had a PHQ-8 score indicative of moderate-to-severe depression, which is much higher than their counterparts who did not report experiencing hunger in the past 4 weeks (8% in Jordan and 3% in Palestine; see **Tables 4** and S2). These findings were echoed in the qualitative interviews, which underscored the sense of hopelessness that many adolescents feel as a result of the curtailment of employment and services during the pandemic. As a 14-year-old Syrian refugee living in a host community in Jordan noted:

It destroyed the world psychologically as there isn't any work for months or anything . . . How did I manage? I swear I don't know.

Social protection programs and their effects on adolescent well-being

Despite the significant economic shock caused by the pandemic and associated measures (see Table S3), only a small minority of households surveyed received social protection support during this time (see **Table 5**). In Palestine, only 19% (34% in Gaza) received any cash assistance from any organization, other than what they usually received before Covid-19. People with disabilities (30%), refugees (24%), and camp residents (23%) were more

Table 5. Social assistance services provided to households during Covid-19

Variables	Palestine		Jordan	
	Number	%	Number	%
Household (HH) receives cash transfer from any organization	181	18.5		
HH receives any aid (World Food Programme [WFP], United Nations Relief and Works Agency for Palestine Refugees in the Near East [UNRWA], Hajati [UNICEF Jordan's cash-for-education transfer programme], or United Nations Refugee Agency [UNHCR])			2,399	78.7
HH has WFP food voucher card	67	6.9	2,253	95.9*
HH has been able to buy less food with WFP voucher (those with voucher)	11	16.9	1,094	48.6*
HH has UNRWA food aid card (among refugees)	326	63.3	70	27.3*
UNRWA food aid card value decreased or HHs stopped receiving (those with card)	93	28.5		
HH receives Hajati benefits			316	13.8
HH has received less or no cash from Hajati			55	17.6
HH receives UNHCR benefits			585	35.9
HH has received less or no cash from UNHCR			50	8.6

*Statistically significant.

likely to receive cash from other organizations compared to people without disabilities (17%), noncamp residents (17%), and nonrefugees (13%), and the differences were statistically significant (Table S4). In Jordan, 79% of caregivers reported receiving any type of aid, with a higher proportion among Syrian refugees (96%) and those living in informal tented settlements (95%).

Some 22% of households in Palestine (among cash beneficiaries) and 18% among Hajati beneficiaries in Jordan reported receiving no cash or less cash during Covid-19 than they did before (Tables 5 and S4). UNHCR assistance (designated to refugees) was received by 36% of households in Jordan; 9% of households indicated that they were receiving less support from UNHCR than they used to (Table 5). Our qualitative findings indicated that even for families who received the same cash amounts, rising inflation meant they could no longer meet their needs. For example, a 16-year-old Syrian refugee boy from a host community in Mafraq governorate explained that:

There is a voucher and the eye print [biometric cash transfer]. From the cash we buy diapers and milk for my baby sister but that does not go far enough anymore [after the coronavirus], so we now try to sell the food voucher so that we can afford to buy some vegetables from the local market, which is cheaper

World Food Programme (WFP) assistance was received by 96% of households in Jordan (mostly vulnerable refugees) and 7% in Palestine, especially for nonrefugees and people living outside camps; among households receiving this assistance, 49% in Jordan and 17% in Palestine reported being able to buy less food with the WFP voucher during Covid. As the United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA)

is mandated to support Palestinian refugees, 63% of households participating in our survey in Palestine and 27% in Jordan (all Palestinian refugees) had a UNRWA food aid card (see Table 5). Still, with the financial constraints facing UNRWA (after drastic cuts to its budget in 2018 by the United States (U.S.) administration of January 2017 to January 2021, 29% of households in Palestine reported that the card's value had decreased or that they had stopped receiving assistance altogether. This was confirmed by adolescents during interviews. A 17-year-old refugee girl in Gaza explained how:

The prices of everything in the market have risen, Gaza imports everything from abroad, and factories abroad have been closed because of coronavirus, so prices have risen dramatically In my family no one is working—we depend on the UNRWA food coupons but they barely cover the very basic things we need.

In Palestine, social assistance programs made only a limited contribution to promoting food security and improving adolescent well-being. For instance, adolescents in households that were receiving cash assistance during Covid-19 reported less positive perceptions about their health (86%) than those in families who were not receiving any assistance (92%), and the differences were statistically significant (see Table S5). Also, adolescents in households who received cash assistance from any organization during Covid-19 were more likely to report experiencing hunger in the past 4 weeks (53%) than their peers who had not received cash assistance (17%), possibly reflecting their high degree of vulnerability or inadequacy of the assistance to meet their essential food needs. Similarly, households receiving assistance were less likely to be able to buy essential food items in the past 7 days

(62%) than their counterparts who were not receiving assistance (26%), with statistically significant differences (see Table S5). Moreover, adolescents in households who were recipients of any assistance were more likely to report scores indicative of moderate-to-severe anxiety, moderate-to-severe depression, and low resilience than their peers from households who were not receiving any assistance from any organization, and the differences were statistically significant (see Table S5).

Similarly, as Table S5 shows, in Palestine, adolescents belonging to households who received any cash assistance were more likely to experience greater reductions in the adolescents' dietary diversity reduction scale than their counterparts in households who did not receive any cash assistance (1.63 out of 4 vs. 0.9). Similarly, recipients of UNRWA and WFP assistance also showed greater reductions in the dietary diversity reduction scale than nonrecipients, with statistically significant differences (see Table S5). The latter finding about the limited contribution of assistance should be interpreted with caution, bearing in mind the high degree of vulnerability of these households and the inadequacy of the assistance provided to meet their multifaceted needs. The inadequacy of the social assistance provided was also highlighted in our qualitative interviews. A 14-year-old refugee girl in Gaza emphasized that despite receiving UNRWA food assistance, her family was reliant on food donations from relatives to cover even basics such as flour:

We have no money . . . We don't have flour for a month now. We used to ask my maternal uncle to give us some flour as the UNRWA flour allocation doesn't last us during the lockdowns with everyone at home all the time . . . Now, we only live on the food we get from my maternal uncle and they rarely give us. We mainly eat bread, duqqa [Middle Eastern condiment] and sometimes cheese, as my uncle sells cheese . . . Sometimes we don't have anything to eat . . . Our life was better before the pandemic. Before, my mother used to cook dishes for us, but after corona[virus], we don't have money and mother can't find anything to cook.

By contrast, in Jordan, social assistance programs made a more significant contribution to promoting food security, dietary diversity, and improving adolescent well-being. The assistance provided helped vulnerable refugees to meet their essential needs; adolescents in vulnerable families who were receiving any social assistance were less likely to report low resilience (34%) than those in families who were not receiving assistance (41%), and the differences were statistically significant. This finding was reinforced in qualitative interviews with adolescents whose families had previously been cash transfer recipients but had then had the assistance discontinued when aid volatility resulted in significant cuts in UNHCR spending. A 16-year-old Syrian refugee boy in a host community in Jordan described his family's situation:

Our case is too bad now . . . because we no longer have the eye print [cash assistance] from us. They cut it before the pandemic . . . We have nothing except for the food coupon and we don't know how to pay for the rent . . . It is much worse now as opportunities for daily laboring are also scarce.

Among survey respondents in Jordan, we found no statistically significant differences in reported figures for experiencing hunger in the past 4 weeks, ability of households to buy essential food items, and scores on the GAD-7 and PHQ-8 scales indicative of anxiety and depression. Analysis by type of assistance shows that UNHCR cash assistance to refugees in Jordan made a positive contribution, especially in improving households' ability to buy essential food items (see Table S5). Similarly, UNRWA assistance to Palestinian refugees in Jordan contributed to improving adolescents' resilience, as the prevalence of low resilience among recipients of assistance was much lower than among nonrecipient households (33% and 50%, respectively), with statistically significant differences (see Table S5).

Discussion

Our study underscores that—during Covid-19 lockdowns—adolescents faced tremendous nutritional challenges, which as reported by them, adversely affected their physical and mental health. However, it is worth reminding the reader that participants' responses reflect their own experiences and are indicative of perceived impacts rather than causal relationships; the design of this study precludes causal claims. Findings highlight that a significant proportion of adolescents in Jordan and Palestine experienced reduced dietary diversity and greater food insecurity as a result of Covid-19 and associated lockdowns imposed in March 2020 and continued till the time of data collection. Our findings align with the recent literature, which indicates that the pandemic compounded pre-existing vulnerabilities, including food insecurity, among refugee adolescents [21, 27]. Our conclusion that adolescents with worse economic and food security outcomes were more likely to have worse self-reported physical health and lower resiliency scores, as well as higher levels of anxiety and depression, is consistent with a recent publication, which indicates that increased vulnerability to Covid-19-related shocks is associated with lower resiliency and coping scores [40].

These findings are cause for significant concern. Not only do they underscore the toll that the pandemic has taken on progress toward achieving commitments made under SDG 1 and SDG 2 to eradicate poverty and hunger in contexts affected by forced displacement, but also in terms of commitments under SDG 3, to ensure health and well-being for all—and not least for young people during the pivotal decade of adolescence [43]. What is especially concerning is what our findings suggest about the impact of the pandemic on young people's resilience: pre-pandemic contexts of forced displacement, chronic poverty, and youth unemployment have seen conditions for young

people deteriorate further as a result of the pandemic shock, and these multilayered challenges have been especially difficult for the most vulnerable adolescents to cope with. Those who are most vulnerable include adolescents with disabilities, married girls, adolescents who are out of school, and young people from refugee households living in host communities, where packages of support are typically more disparate. Our findings reflect those in the broader literature about compounding disadvantages experienced by young people in LMICs during the pandemic [44–47] but add novel empirical evidence about its effects in contexts of forced displacement and across the most vulnerable groups of adolescents.

We also found that the extent to which social protection measures had mitigated these consequences was very limited in Palestine, but more significant in Jordan. A recent study showed no association between the household being a recipient of social protection and adolescent well-being and found that receiving social protection only moderated the effects of Covid-19 vulnerability for less vulnerable households [40]. The latter study also indicates that disability status, being out of school, and experiencing child marriage are associated with adverse outcomes [40]. In line with the broader literature, which argues that cash transfers need to meet a certain income threshold to meaningfully support pathways out of poverty [48, 49], our findings indicate that the transfer amounts received by Syrian refugees in Jordan are between 2 and 4 times greater than that received by vulnerable Palestinians under the Palestinian National Cash Transfer Programme [26, 50]. While our findings indicate that the transfer amounts in Jordan help support survival needs but are too low to adequately tackle young people's physical and mental health challenges, the comparative lens employed in this article sheds light on the politics of aid, including declining support for refugees in situations of protracted crises [51, 52]—of which Palestine refugees are an emblematic case [53–55].

It is also worth noting that the nature of the Palestinian–Israeli conflict, the chronicity of the statelessness situation, and the exceptional approach used by the international community in tackling Palestinian refugees' issues makes it challenging to realize international commitments in the Palestinian situation. Moreover, the principles of the Global Compact on Refugees, which could contribute to a reduction of vulnerabilities, do not apply in Palestine as UNRWA is mandated to solely serve Palestinian refugees. More specifically, our findings highlight the material effects on young people's lives of the funding shortcomings that UNRWA has faced as a result of conservative geopolitics and especially funding cuts instigated under the previous U.S. administration (January 2017–2021) [56, 57]. Therefore, solutions to address adolescents' vulnerabilities, such as those described here, must take into account how political situations shape not just adolescents' lives but also those of their families and their communities and should prioritize sustainable approaches that promote adolescent capabilities.

Conclusions

Overall, our findings show that the Covid-19 pandemic has had a significant impact on household food insecurity and poverty and that these consequences have had negative impacts on adolescents' physical and mental health, among host and refugee communities in Jordan and Palestine. Young people who were already disadvantaged—including adolescents with disabilities, married girls, out-of-school adolescents, and young refugees living in host communities—were found to be especially at risk. To mitigate the disruptive effects of the pandemic on progress toward SDG 1 and SDG 2 (to eradicate poverty and achieve food security for all) and the interlinked SDG 3 commitment to health and well-being across the life course, our research suggests that it is critical to invest in emergency-responsive social protection packages that reach a minimum income threshold to enable meaningful and fast-tracked transitions out of poverty. This support needs to be informed by context-tailored vulnerability assessments of young people's specific and intersecting needs, including those based on their age, gender, and education level and on their marital, disability, and displacement status.

Data accessibility statement

The data collected in this study are subject for sharing according to Gender and Adolescence: Global Evidence (GAGE) data sharing policy. Currently, the set of quantitative data is not ready yet for public sharing as it requires processing and measures to ensure data confidentiality and protecting rights of participants. Potential users can contact the GAGE programme hub office to enquire about use ahead of public archiving. gage@odi.org.uk

Supplemental files

The supplemental files for this article can be found as follows:

Table S1. Caregivers' and adolescents' experiences of food insecurity during Covid-19.

Table S2. Effects of food insecurity on health outcomes.

Table S3. Economic challenges reported by adolescents' caregivers during Covid-19 pandemic.

Table S4. Social assistance services provided to households during Covid-19.

Table S5. Effects of social assistance programmes on household/adolescent food security and well-being.

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Competing interests

The authors declare that they have no competing interests.

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Author contributions

- Conceptualization: NAJ, AMM, EDN, BAAH.
- Data curation: AMM, BAAH, NAJ.
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- Methodology: AMM, NAJ, BAAH, EDN.
- Project administration: AMM, BAAH, NAJ.
- Supervision and validation: AMM, BAAH, NAJ.
- Writing—original draft: BAAH, NAJ, EDN.
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