BERMUDA ADVERSE CHILDHOOD EXPERIENCES STUDY

WHITE PAPER • CAPACITY DEVELOPMENT • SURVEY TOOLS • PRACTICAL APPLICATION

SUPPORTED BY

Family Centre
Where Children Come First

Bermuda Health Council

ACKNOWLEDGEMENTS

(A.K.A. THE REASON WE COULD DO THIS RESEARCH)

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With full hearts we send our sincerest gratitude.

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A MESSAGE FROM FAMILY CENTRE

Family Centre
Where Children Come First

Understanding how Adverse Childhood Experiences or ACEs affect persons' health and behaviour throughout their life has been one of the most transformative developments in public health over the last two decades. Adverse childhood experiences are negatively associated with poor educational attainment, challenges with employment, and health-harming behaviours. ACEs often underpin antisocial and criminal behaviour in adolescence and in adulthood, the development of poor health. Dr. Stephanie Guthman called Bermuda's attention to ACEs in 2018 when she generated the idea of Family Centre hosting public conferences on ACEs and collecting local research on the prevalence of ACEs so that we can better understand ourselves and move forward to address the critical issues at hand.

In Bermuda, human services professionals have recognised ACEs as a common occurrence preventing individuals from fulfilling their full potential due to negative impacts on health, social behaviour, education and employment. Understanding the potential impact of early adversity across the life span is critical to breaking harmful intergenerational cycles. The collaborative work on ACEs between Dr. Stephanie Guthman, Family Centre, and Tara Hines, Bermuda Health Council, has generated the research in this White Paper which will help to inform Bermuda on the state of our overall health. It is hoped that this will help to drive local services and programmes to prevent ACEs wherever possible as well as supporting those who continue to be affected by childhood trauma.

It is universally recognised that whilst eliminating ACEs is an aspiration, people will continue to experience and be adversely affected by ACEs. Not everyone who suffers ACEs will however experience the same harmful outcomes. This is due to the presence of protective factors that balance out the risk factors in their lives. Building resilience can help people avoid and overcome many of the problems arising from childhood adversity. Support from a family member, friend, doctor, mental health professional, teacher, mentor, coach, or from elsewhere in the community can prove the critical difference between ACEs landing a person into a detrimental life course or, with the appropriate help, finding better health outcomes and prosperity.

This work on ACEs in Bermuda, supported jointly by Family Centre and Bermuda Health Council, is a first step towards understanding ACEs in our community, its impact on our overall health, social, and economic wellbeing and how to build resilience in our community so that we can be a healthier society. This will require support of the human services that help people to heal from ACEs and build protective factors needed to not only survive life but to thrive in life. Thanks to Dr. Stephanie Guthman and Tara Hines' pioneering research work in this area, we will be using this report to better understand how our services and those of our partner organisations can help build resilience in some of our most vulnerable individuals.

Dr. Sandy De Silva, Psy.D.

Dr. Sandy DeSilva, PsyD
Bermuda Registered Clinical Psychologist
Executive Director, Family Centre

A MESSAGE FROM BERMUDA HEALTH COUNCIL

The Bermuda Health Council has the role within the country of Bermuda to regulate, coordinate, and enhance the delivery of healthcare services. To properly conduct this role, we as an organization must be forward thinking, rather than reactive, in our support of improving population health. We understand that improving health is a multidimensional and complex proposition, and every aspect of the social experience plays a significant role in the potential outcomes.

As we pondered participation within the ACEs process, our first goal was to determine whether it aligned with our mission. Our recent focus on chronic mental and physical condition questions, and creating comprehensive answers to combat them, presented an alignment and a perspective in the development of community solutions that was missing. This survey, along with being an opportunity for data collection on population variables, helps the country to better understand how individual experiences may be associated with long term health outcomes and subsequently the use of the health care system. We would like to thank the community within Bermuda for their willing participation and specifically Dr. Stephanie Guthman and Mrs. Tara Hines for their technical work.

As a system that costs over $730 million for just 64,000 individuals, and one where such money flows can create economic anxiety, it is important that we constantly refine the conceptual frameworks of impact. What was eye-opening as we examined the information obtained with ACEs is what many may perceive as normal occurrences create such a windstorm of unanticipated consequences and long term effects. In addition to just observing the qualitative effects, it was truly disappointing to see the measured level of frequency of these adverse events occurring within vulnerable cohorts.

We hope that this survey represents a wake-up call to all residents of this country that there are real risks to children within the community. These risks are concerning and quantifiable in many short and long term ways. It is therefore up to each member of this collective Bermuda house to find ways to support those who have been affected and prevent those who are currently safe from being placed in harm's way.

So as the Health Council continues to support such research and other activities within the health system, we do thank the drivers of this work for creating another avenue for transparent discussion on a topic that is truly important. This must only be a start and we look forward to assisting these efforts and the resulting updating of relevant health and social policy, into the future.

Dr. Ricky Brathwaite, PhD, MS, MSHS
Chief Executive Officer
Bermuda Health Council

WELCOME FROM THE PRINCIPAL INVESTIGATORS

Dear Reader,

Welcome to the Bermuda Adverse Childhood Experiences Study (2018)! As you can tell from the collection of forewords, this research is being presented with immense gratitude and excitement.

In 2018 the Family Centre and Bermuda Health Council partnered to embark on the Bermuda Adverse Childhood Experiences Study. As principal investigators, we met to determine the best comprehensive research to implement in Bermuda around the impact of adverse childhood experiences. Combining our decades of clinical and research expertise, our focus has been evidence based trauma informed interventions that could continue to benefit and empower the country. In our professional work, some of these avenues have been discussed, but little released publicly.

For the Bermuda study we are presenting here, we decided to incorporate additional questions on potentially traumatic experiences that fall outside of these original domains. The reality that we both have seen first-hand and read about as the "un-measured effect" for years is that experiences of loss and social pressures can be traumatic and quantifiable in the same ways as those other meaningful measures. We decided to seek out validated questions and subject matter experts to incorporate new ACEs measures around poverty, racism, and the impact of road traffic accidents into the 2018 Bermuda Adverse Childhood Experiences Study.

With this holistic approach and community devotion in mind, we began with the World Health Organization (WHO) Adverse Childhood Experiences- International Questionnaire (ACE-IQ) and supplemented with newly developed questions that apply specifically to Bermuda.[1] We used the WHO ACE-IQ as the basis of our own questionnaire as it is intended for use in any country and has been rigorously evaluated, adding depth to concepts that may have only scratched the surface before.

On a more personal note, we also wanted to ensure every protection and resource possible for everyone from survey respondents to you, our reader. Instead of simply informing you of statistics or discussing the study in purely academic terms, we have created a template of research conduct intended for reproducibility and transparency. From ethical approval to disclosures of risk and suggestions for future applications, this report is intended to put tools in the hands of those who will do the building.

We are grateful to all of you, from participating in the study to reading about it and beyond, as we move from stigma and silence to evidence based empowerment. For this reason, we also look forward to continuing research in the realm of adverse childhood experiences and looking for more ways to turn information into action.

Mrs. Tara Hines, MSPH, EMT-B
Clinical Data Analytics & Outcomes Research

Dr. Stephanie Guthman, PhD, Psychologist
Director of Specialized Training and Assessment, Family Centre (June 2020)

ABSTRACT

PURPOSE & SUPPORT

The purposes of this study are to:

1. Assess the frequency of adverse childhood experiences and adult risk behaviours;

2. Determine statistically significant odds ratios between adverse childhood experiences and health outcomes in adulthood, using international metrics for further comparison;

3. Obtain baseline national data trends, for the population, based on statistically significant associations;

4. Participate in and build capacity within the research infrastructure of Bermuda, and;

5. Communicate findings and provide an evidence base for Bermuda-specific interventions and initiatives.

The country of Bermuda is under-represented in research related to adverse childhood experiences, as well as many other social determinants metrics, both for the CARICOM region and in the larger global context.

Further, statistics reported in "Country Report: Bermuda" and transaction-level claims data support the unique need for adverse childhood experiences research, on a national scale, as a component of understanding the chronic disease burden and subsequent health system costs.[2,3] Additionally, tools to assess risk and trauma among children in Bermuda have already suggested that approximately one in four public school students from grade P4 to S1 is at risk due to multiple indicators of household dysfunction and exhibits lagging or lacking executive functioning skills.[4]

BACKGROUND

Dubbed the "unaddressed non-infectious public health emergency of our life-time," adverse childhood experiences or ACEs have a significant and lasting impact, and are associated with clinically diagnosed diseases and challenges throughout adulthood.[5]

ACEs research traditionally recognises three domains that cause lasting trauma including types of abuse, neglect, and family dysfunctions. Creating policy and tools to intercept the traumatic events or working toward better treatment as a way of preventing further lasting effects among children, are both laudable and necessary responses to the ACEs study.

When discussing ACEs, conversations often focus on interventions tailored for children, specifically, however, there are also opportunities to improve outcomes among adults, by recognising the role of childhood trauma in its association with chronic disease. Therefore, ACEs studies aim to identify trends among adult participants, which can generate interventions for the current population and future generations.

With regard to research impact for children and adults, the information and associations garnered from childhood adversity research are so prolific that over 100 countries have registered validated questionnaires and results with the World Health Organization (WHO). The Bermuda Adverse Childhood Experiences Study (2018) will be the first to contribute metrics for the country of Bermuda, just as the wave of health economics are also coming in to focus.

The prevalence of the collective ACEs studies and childhood adversity's undeniable association has more recently led to attention from economists. As of 2019, the Lancet published meta-analysis of total ACEs attributable *annual* costs for North America were $748 billion and $581 billion for Europe. Even more striking is the understanding that a 10% decrease in adverse childhood events prevalence suggests at least a $105 billion savings

across both regions.[6] Bermuda cannot afford to continue moving forward without findings and action from this research.

Worldwide, ACEs research has become standard litmus when determining paths for social determinant related public health (arguably, all public health) programmes. Bermuda has now joined these ranks while contributing additional, informed questions touching on racism, poverty, and road traffic accidents. Though developed to be Bermuda-specific, the novel domains are pervasive and in need of understanding in many other contexts.

METHODS

An internationally validated survey tool, the WHO Adverse Childhood Experiences International Questionnaire, is the basis for the Bermuda ACEs questionnaire. Additional questions related to uniquely relevant themes of trauma, evaluated from Bermuda-based publications and stakeholder engagement, were incorporated.

The questions were then structured in an online survey bank, as well as via paper and audio script formats. All formats are currently available, which has allows for open and completely anonymous participation, as well as the ability to exit the survey without answer submission at any time. The Bermuda ACEs survey is also continuously available in English and Portuguese.

Data analysis will be on-going, including odds ratios for associated conditions between childhood trauma and clinical outcomes in adulthood as well as regression based trends across multiple variables. Primary data analysis is presented, here, including frequencies and noted statistically significant relationships along with future applications using this same methodology. Every effort for transparency has been made, as well as strict statistically significant adherence to a $p<.01$ threshold.

RESULTS

Cumulative results for each survey question are reported as frequencies, with notes or caveats as needed for clarification. Additionally, the interaction of variables for increased odds or potential trends are presented. The results presented are not the limit of all findings from this study, but do provide an introduction to participants' responses. Of particular significance are the results from the newly validated Bermuda- specific questions. The results suggest a statistically significant role for racism, traffic accidents, and poverty as causes of trauma. Similar to the extensively established research base published internationally, responses also demonstrated associations between childhood adverse experiences and physical chronic disease burden.

Researcher's Note

An **abstract** is usually a shorter summary of the research presented. It serves to provide key details of the article and the purpose of the research. Here, a bit more is provided so that it can be treated as a stand- alone document, similar to an Executive Summary.

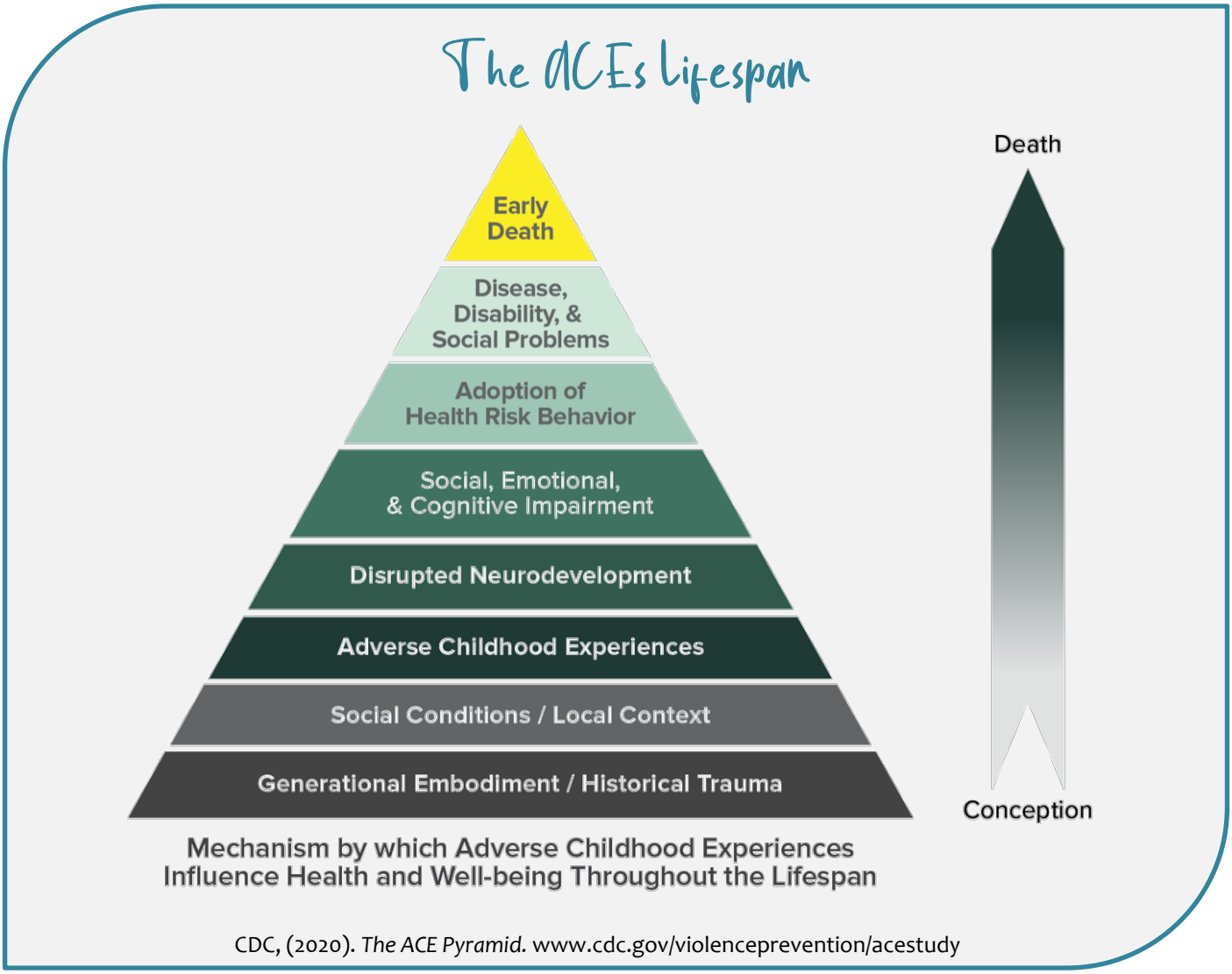
The inclusion of **statistical significance** at a p value less than .01 can be interpreted as less than 1% probability that random chance is actually responsible for the observed statistic. For more information on either statistical significance or analytics, refer to **Appendix E: Additional Resources**.

Discussion

The overall impact from the Bermuda Adverse Childhood Experiences Study (2018) is a uniquely national evidence base that focuses on the experience of those who lived in Bermuda, during their childhood as well as now, in adulthood.

As the first publication to release baseline data, the reported results and relationships show statistically significant trends that can be used to inform novel trauma prevention methods for both children and adults.

The findings further support opportunities for recognising and working through community-associated trauma in addition to individually-centered childhood experiences, and point to potential applications for interventions. An evaluation of those interventions, suggestions for step wise introduction, and stakeholder feedback are also presented to facilitate action. The opportunity to significantly impact preventable morbidity and mortality, in Bermuda, is a direct response to the known lifespan continuum associated with adverse childhood experiences, shown below.



CDC, (2020). *The ACE Pyramid.* www.cdc.gov/violenceprevention/acestudy

INTRODUCTION

When most people hear the word "ACEs" they immediately think of the highest card in a deck of playing cards; "if you are holding all of the ACEs, then you've got a winning hand!" However, for many, the ACEs they carry are instead an acronym for "adverse childhood experiences." Adverse childhood experiences are a collective series of events, interactions, relationships, and perceptions, carried by almost all individuals from childhood that can be evaluated as trauma.[7]

Prior to the late 1990's, the conceptual impact of childhood trauma on individual development, or even what would constitute trauma, was missing. The evolution of recognising not only that traumatic events can be defined and quantifiable, even for children, but also that un-reconciled childhood trauma can have profound clinical effects later in adulthood, would only occur after the completion of one of the largest epidemiologic studies to ever take place in the United States.[8]

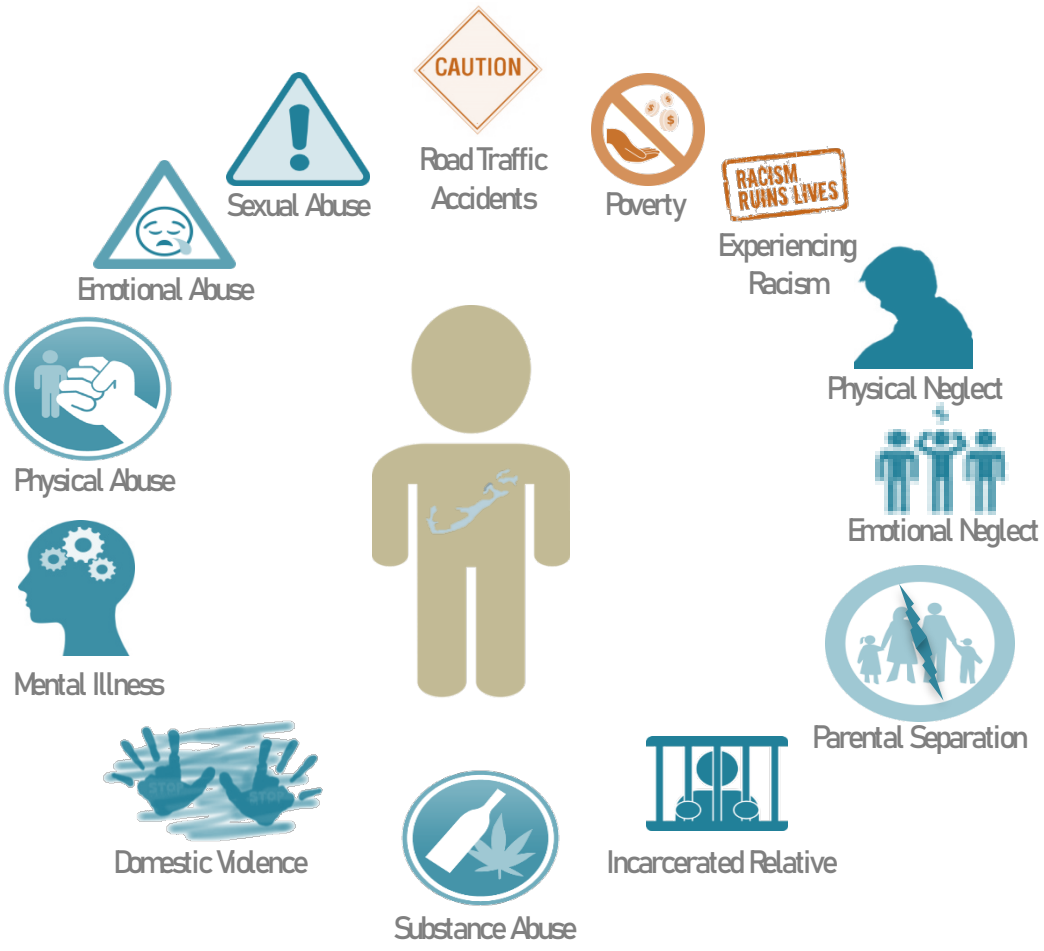
The studies began with adult participants, not children, at an obesity clinic. The lead investigator, Dr. Vincent Felitti, found many morbidly obese individuals who were experiencing success in the weight loss programme, were dropping out. The patients, on average, weighed over 300 pounds and saw significant sustained successes of 100 pound losses, before deciding not to continue in the programme.[9] The progressive thought process, at the time, was that food was functioning as the target of their addiction, and that their leaving the programme was essentially an addictive relapse. Upon following up with participants who had left the weight loss programme early and those who were still enrolled, Felitti discovered the majority (55%) had experienced child sexual abuse.[10] Moreover, and challenging addiction as the sole motivation, most individuals shared similar weight gaining characteristics. Each had been born a normal weight and spent some portion of childhood at a normal weight, if not all of their childhood. Their weight gain was not gradual over time, but instead quickly increased. Soon after any weight loss, weight re-gain would occur, often leading to an even higher total weight than before. This cycle would then once again stabilize, until being subjected to another disruption.[11]

Making History

Convincing the medical community of such a distinct and significant clinical impact from events relegated to "bad things that happened decades ago," required a larger trial be conducted. Felitti worked on behalf of a large health network, Kaiser Permanente, which provided both insurance and health services.[12] The influence of Kaiser Permanente's support coupled with access to a participant group of over 50,000 people who annually visited their department presented a fertile ground for the launching of a new longitudinal study. The United States Center for Disease Control and Prevention (CDC) partnered with Kaiser Permanente as they added ACEs specific questions to their established patient information questionnaire. Ultimately, they determined the additional questions would touch on the **three domains of abuse, neglect, and household dysfunction**, based on the published childhood trauma data and the anecdotal collection that occurred during the initial 286 person interviews.[13]

The study waves conducted by Dr. Felitti were ground-breaking and provided an entirely new framework to evaluate trauma and chronic disease in children and adults. To that end, the original ACEs study was robust in number with 17,337 participants in total. Each participant, through mail in or direct submission, provided responses detailing their own exposures during childhood with regard to abuse, neglect, and household dysfunction. Ultimately, there were ten identified types of trauma measured, creating a 0 through 10 score for respondents. Over two-thirds of participants had a score of at least 1 ACE, with the highest risk group for adult onset chronic disease having at least 4 confirmed ACEs.

Bermuda ACEs Model



The three domains established in the original ACEs of abuse, neglect, and household dysfunctions are the larger or umbrella terms that contain ten total metrics of adverse childhood experiences. Types of abuse were the first identified by Felitti and include **physical, emotional, and sexual abuse**. Household dysfunctions were also indicated from literature and his preliminary evaluations, which speak to relationships with family members. The five household dysfunctions considered as fundamental are **mental illness of a live-in relative, domestic violence, substance abuse or incarceration of a close family member, and divorce renamed parental separation**). Both **physical and emotional neglect** were added just prior to Felitti's study deployment.[14] Bermuda's ACE domains are also added, here, as **experiences of racism, poverty, and road traffic accidents**.

Today, a growing body of knowledge enumerates the harmful effects of ACEs that are experienced during childhood or adolescence, an entirely preventable burden.[15,16,17] The Kaiser Permanente-CDC ACEs studies made the connection, and the physiologic measures to substantiate the association would soon follow. Those additional studies indicate that traumatic experiences can overwhelm a child's natural ability to cope and can cause stress reactions, including feelings of intense fear and helplessness.

The findings also suggest that children's responses to trauma can disrupt early brain development, compromise functioning of the nervous system, and weaken the immune system, all of which results in impaired cognitive, social, and emotional functioning.[18,19,20,21,22] For example, exposure to excessive or prolonged activation of stress can bring about changes in the architecture of different regions of the developing brain (amygdala, hippocampus), which can impact a range of important executive functions such as regulation, attention, memory, planning, concentration and learning new skills.[23,24]

Ultimately, the more ACE categories that an individual reported as having experienced, the greater the risk of health-harming behaviours and poor health outcomes later in life, which, in turn, increased risk of premature mortality by as much as 19 years. Once this association and subsequent study structures were released for international use, the ACE study grew to include over 100 countries, today.[25]

BERMUDA CONTEXT

Consistent capture of data within the ten categories, under the three domains across countries globally, led to the basis for new Bermuda research. Although reliable data was captured in the original and subsequent waves of ACEs questionnaires, there has been criticism of the study population in the original Felitti study. Essentially, although the initial study's population size was robust at over 17,000 individuals, the participant group was relatively homogeneous; most were white (74.6%), over 50 years of age (66.3%), and college educated (75.2%).[26] For this reason, as well, the Bermuda study would be returning to the beginning to determine the quantifiable impact of childhood adversity on adults.

According to the statistically significant associations established over the past two decades, the domains for adverse childhood experiences would need to be represented in the developed questionnaire, as well as a full panel of common chronic diseases and high-risk behaviours. Bermuda, as an independent country and as a part of the CARICOM region, is under-represented in this research, which lends to creating a study that is all encompassing.[1]

Therefore, the Bermuda Adverse Childhood Experiences study that we began in 2018 uses the World Health Organization developed Adverse Childhood Experiences International Questionnaire (ACE-IQ). The ACE-IQ provides the means for: (1) the measurement of childhood adversities in all countries, as well as comparisons of such adversities between them; (2) drawing associations between childhood adversities and health risk behaviours and health outcomes in later life; (3) needed advocacy for increased investments to reduce childhood adversities; and (4) vital scientific information that can be used to inform the design of prevention programmes.[27]

To address the unique needs of the "Bermuda context," the ACE-IQ was adapted by including Bermuda-specific questions, and is designed for participants aged 18 years and older.

[1] A pilot study in Bermuda public schools evaluating trauma, independent of the national study presented here, and a school climate survey have been deployed, however neither have been published or engaged adult responses.

OBJECTIVES

The purpose and associated objectives of the Bermuda Adverse Childhood Experiences Study (2018) were two-fold, divided between baseline data capture for the whole of Bermuda and the greater contributions of the study, itself, to the on-island research capacity and infrastructure.

There is already some support available, in analytics form, to substantiate both purposes. For example, statistics reported in "Country Report: Bermuda" and transaction level claims data support the unique need for adverse childhood experiences research, on a national scale, as a component of understanding the chronic disease burden and subsequent health system costs.[28,29] For the years that are internationally reported, chronic illnesses individually and multiple chronic illnesses for a single patient (also called co-morbidities) are shown to be the most common causes of decreased quality of life and mortality.[30]

The country of Bermuda is also, more specifically, under-represented in research related to adverse childhood experiences, or even larger social determinants as well as many other social determinants metrics, both for the CARICOM region and in the larger global context.

Research Capacity Objectives

1. Participate in and build capacity within the research infrastructure of Bermuda.

2. Communicate findings and provide an evidence base for Bermuda-specific interventions and initiatives.

3. Share results in publication, at the 2019 October ACE conference, and among local charities engaged in working with ACE related interventions to help inform decision-making for trauma informed cases.

Data Capture Objectives

1. Assess the frequency of adverse childhood experiences and adult risk behaviours;

2. Determine statistically significant odds ratios between adverse childhood experiences and health outcomes in adulthood, using international metrics for further comparison;

3. Obtain baseline national data trends, for the population, based on statistically significant associations; and

4. Conduct pilot data research in Bermuda, in ACE and associated adult conditions, as per international guidance.

METHODOLOGY

SURVEY DEVELOPMENT

A structured and validated questionnaire is the primary research tool used to capture the burden of adverse childhood experiences, in Bermuda. The questionnaire included an abridged version of the World Health Organization supported Adverse Childhood Experiences- International Questionnaire (ACE-IQ). The basis of the ACE-IQ includes parallel questioning about childhood and adulthood experiences around adverse events, abuse, and risk seeking behaviour. In addition, questions about current health status and disease burden are traditionally included, in order to capture association between prior experiences between birth and the age of 18 versus current status. The survey, itself, is broken into demographics, considered the introductory section, followed by questions prompting answers that apply to only the first 18 years of a person's life in sections 1 through 7, and ending with current lifestyle and status questions in sections 8 and 9.

In order to address adverse childhood events of unique cultural import, prior surveys and research were consulted to capture the needs for questioning around experiences of racism, road traffic accidents, and poverty. Each of these types of experiences is considered new for ACEs, worldwide, and therefore required separate validation.[2] In order to validate the additional questions, each was vetted through piloting, structured international literature review, and review by those with relevant professional expertise. The structure of the included questions mimicked the Likert scale and frequency inclusions seen throughout the questionnaire.

Researcher's Note

The process of **validating questions** depends on the type and purpose of question being debuted in a given study. For the purposes of this study, the addition of questions required having parallel wording in the childhood and adulthood sections. We cross- referenced previously published international studies with those conducted in Bermuda. Finally, subject matter experts completed a pilot phase of the completed questionnaire.

The questions were compiled in a free source electronic format (Google forms) hosted by the Bermuda Health Council. The format included both English and Portuguese translations, available by web link. The web link was shared via social media of partnering agencies, by email campaign, as well as multiple routes of popular media (newspaper, radio, and television). The web based forms did not include IP tracking and maintained anonymity through two layers of security.

Surveys were printed and available for pick up or distribution, based on requestor preference. Finally, to ensure greatest access and inclusivity surveys were read to those who had difficulty doing so on their own, with answers recorded on behalf of the respondent.

In order to capture statistically significant data for the country of Bermuda, statistical sampling parameters were established. The parameters included sample size calculation at over 430 unique households to be representative for the country of Bermuda. At final count for inclusion, over 700 responses were recorded with household calculation representing over 430.

[2] Road traffic accidents (RTAs) are continuing to become a component of trauma research and public health prevention, as noted by the WHO when reporting approximately 1.35 million fatalities and 20- 50 million non-fatal injuries worldwide. Outside of ACEs labeled research, the impact of RTAs continues to be a growing public health issue. See **Appendix E: Additional Resources** for more information.

Survey Dissemination and Recruitment

The completed questionnaire was disseminated through multiple outlets to reach as many individuals as possible and to avoid unintended convenience bias.

Points of contact included:

1. ZBM Interview[31]
2. Royal Gazette[32,33,34,35,36,37]
3. Olderhood Radio Interview[38]
4. BF&M Membership Presentations[39]
5. Social Media Outreach (Organizational and Individual)
6. Social Clubs Outreach
7. PTA Outreach & ACEs Presentations
8. Email Blasts (Organizational and Government)
9. Westgate Correctional Facility Outreach
10. 2018 ACEs Conference[40]
11. 2019 ACEs Conference[41]
12. Bernews[42]

Researcher's Note

Access in Bermuda to print and Internet based sources are among the highest in the world. According to self-reporting from the Royal Gazette, **97% of adult readers are reached**.

In 2010, an evaluation of Internet prevalence revealed **89% of households** have Internet and further that senior citizens are among the fastest evolving demographic for Internet use.[43]

Analysis

The majority of survey responses were entered directly by participants into the online survey tool. The responses collected at site visits (including Westgate Correctional Facility and ACEs presentations), and paper forms individually completed (due to lack of access or disability) were entered into the survey tool and reconciled by second review. The survey format allowed for minimal coding, limiting the need for duplicate validation at other points. Instead, all answers were transferred from the repository of individual survey responses in the double encrypted Google form, to an excel sheet by electronic export. From this initial export, data was uploaded into STATA and archived in Microsoft Excel. Responses were analysed by counts as well as odds ratios, across the varying demographic and childhood responses and compared to current lifestyle for initial reporting.

Therefore, the results presented are primarily focused on establishing baseline data and do not include more complex models, which will be released in follow up reports. The presentation of the entire study methodology, however, is representative of how the Bermuda Adverse Childhood Experiences (2018) study has been carried out and is in line with the objectives of this research paper, related to research capacity development.

RESULTS

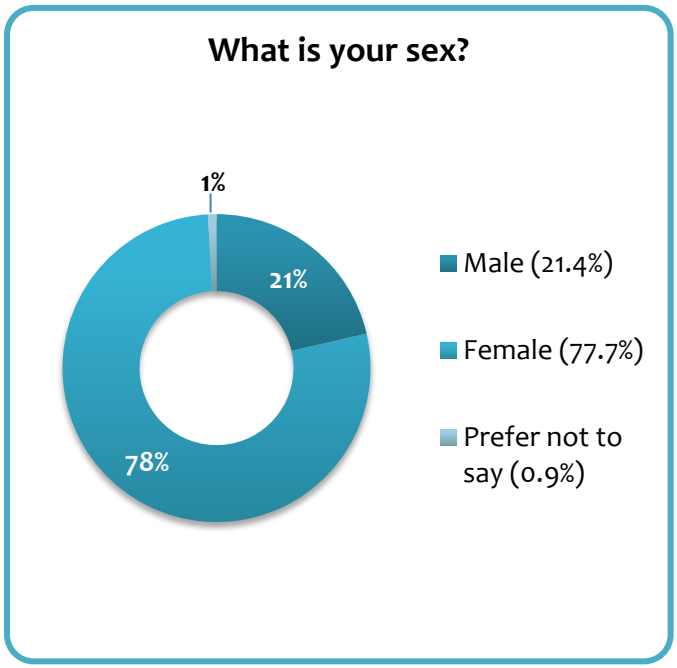
The following are primarily frequency results, taken from the total participant responses, presented by section as percentages. As a result, each question may have a different number of responses, specifically in the demographics section, as many respondents chose not to answer, as opposed to selecting "Prefer not to say." Due to the nature of the questions and the way the questionnaire was presented, it is not possible to conclude if the un-answered questions reflect a missed response or one that should be categorized as "Prefer not to say." For this reason, the results reported here are true to what was entered in the questionnaire, only, with points of interest or clarification listed per question block.

For any questions where a "write in" option was given, for example submission of a participant's birthday, the range is reported here, as opposed to the frequency. The number of different responses and any other remarkable details are also presented with the range.

Further, in an effort to maintain full transparency, responses may be displayed with rounding to either whole numbers or to the tenths decimal place. As a result, the total for some questions may show up to a 1% deviation from 100%, usually as an overage. In those instances, clarifying results have also been provided, to deliberately maintain consistency.

Please refer to **Appendix C: Final Deployed Questionnaire- English** for complete questionnaire.

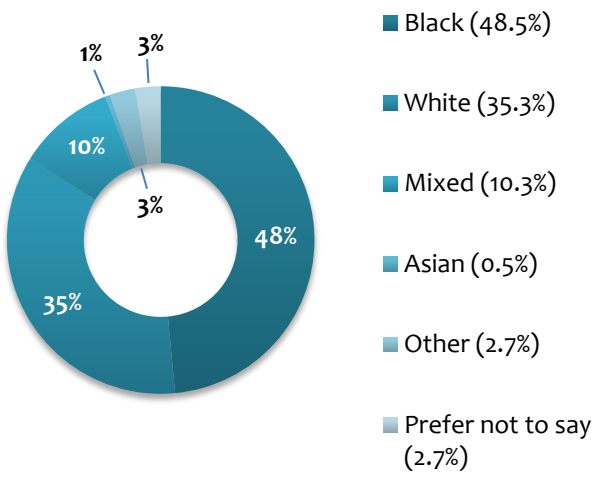
DEMOGRAPHICS (INTRODUCTORY SECTION)



The use of the phrase "sex" in lieu of gender, here, is in reference to the current shift whereby sex is a biologic construct and gender is social.

Additionally, during piloting we received negative feedback for electing to include a non-binary option. This may be an opportunity in the future, however.

Race/ Ethnicity

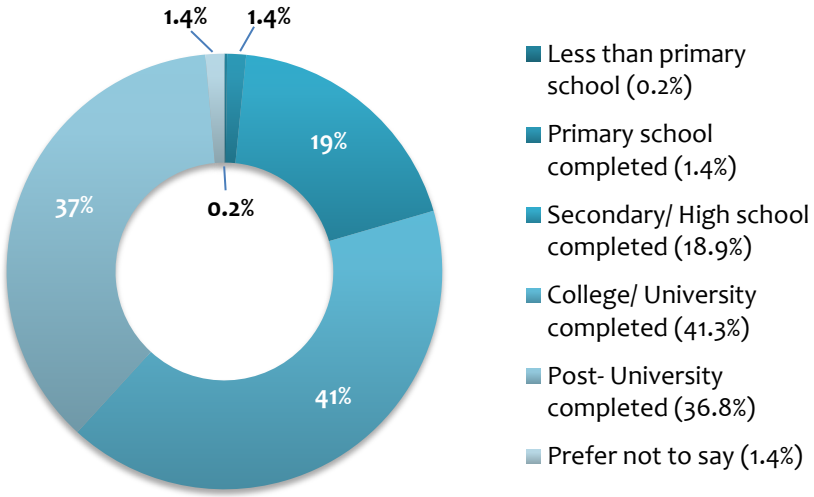


The variable for race/ ethnicity is labeled so that it can be all encompassing (as it is used for international application).

In local research, in Bermuda, often the details are not articulated around race and ethnicity.

The options provided in this questionnaire are in line with Government survey recommendations.

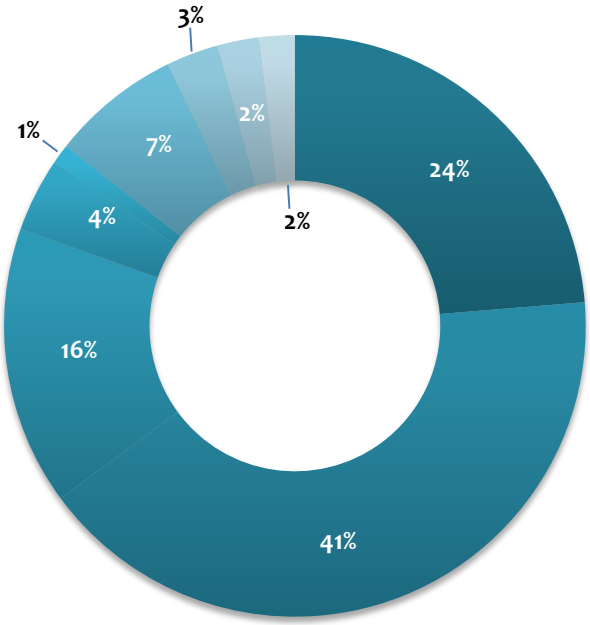
Highest Level of Education



Historically, variables dealing with education attained, income, or work status are skipped or have a negative impact on participation, in Bermuda.

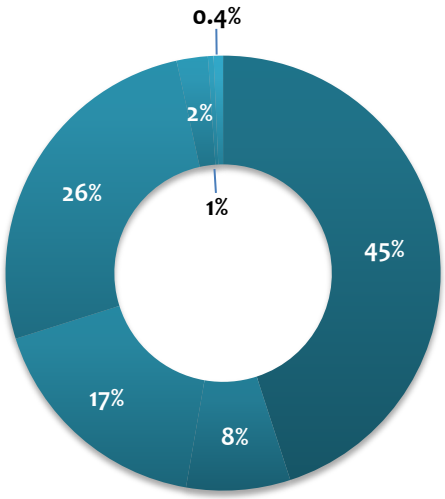
The importance of these variables, however, outweighed the risk in this case, which has led to a robust education variable, with every designation represented.

Main Work Status



- Government Employee (23.7%)
- Non-government Employee (41.2%)
- Self-employed (15.5%)
- Student (4.1%)
- Homemaker (1.1%)
- Retired (7.2%)
- Unemployed (able to work) (2.9%)
- Unemployed (unable to work) (2.3%)
- Prefer not to say (2%)

What is your marital status?



- Married (45%)
- Living as Couple (7.73%)
- Divorced or Single (17.4%)
- Single (26.43%)
- Widowed (2.32%)
- Other (0.42%)
- Prefer not to say (0.7%)

For all questions included in the questionnaire, the option to elect out of answering, but to continue with the survey, is available as "Prefer not to say."

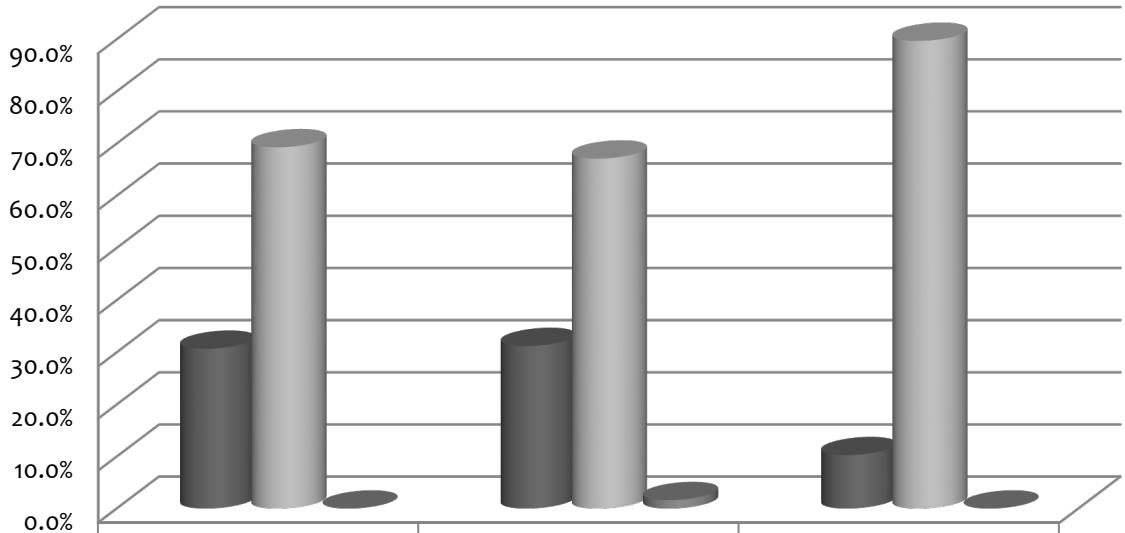
The function of having this option ensures that we can count the participant appropriately.

If a question is otherwise unanswered, it is not possible to conclude if the answer was missed or deliberately skipped.

Childhood Relationship with Parents/Guardians and Family (Sections 1-7)

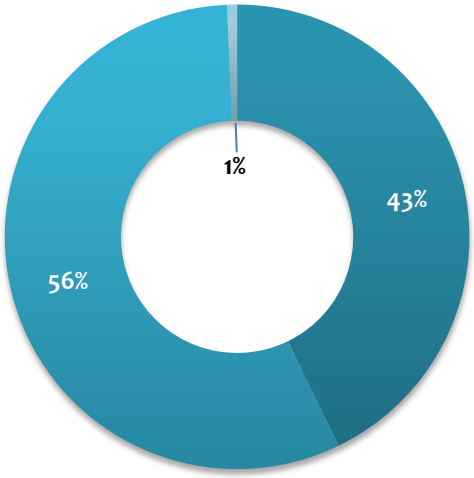
Childhood Relationship with Parents/ Guardians Questions	Responses	Percentage
Did your parents/ guardians understand your problems and worries?	Most of the time	34.2%
	Sometimes	44.8%
	Never	9.8%
	Don't know/ Not sure	11%
	Prefer not to say	0.2%
Did your parents/ guardians truthfully know what you were doing with your free time when you were not at school or work?	Most of the time	45.8%
	Sometimes	43%
	Never	7.9%
	Don't know/ Not sure	3.2%
	Prefer not to say	0%
How often did your parents/ guardians not give you enough food?	Most of the time	8%
	Sometimes	9.4%
	Never	81%
	Don't know/ Not sure	1.3%
	Prefer not to say	0.4%
Were your parents/ guardians too high or too drunk (intoxicated) to take care of you?	Most of the time	1.1%
	Sometimes	11.4%
	Never	85.9%
	Don't know/ Not sure	1.4%
	Prefer not to say	0.2%
How often did your parents/ guardians not send you to school even when it was a school day?	Most of the time	2%
	Sometimes	6.1%
	Never	89.4%
	Don't know/ Not sure	2.5%
	Prefer not to say	0%

Characteristics of Household Member(s)



	Problem drinker or alcoholic, or misused street or prescription drugs	Depressed, suicidal, or had a mental illness	Sent to jail or prison
Yes	30.7%	31.23%	10.3%
No	69.3%	67.14%	89.7%
Prefer not to say	0.0%	1.63%	0.0%

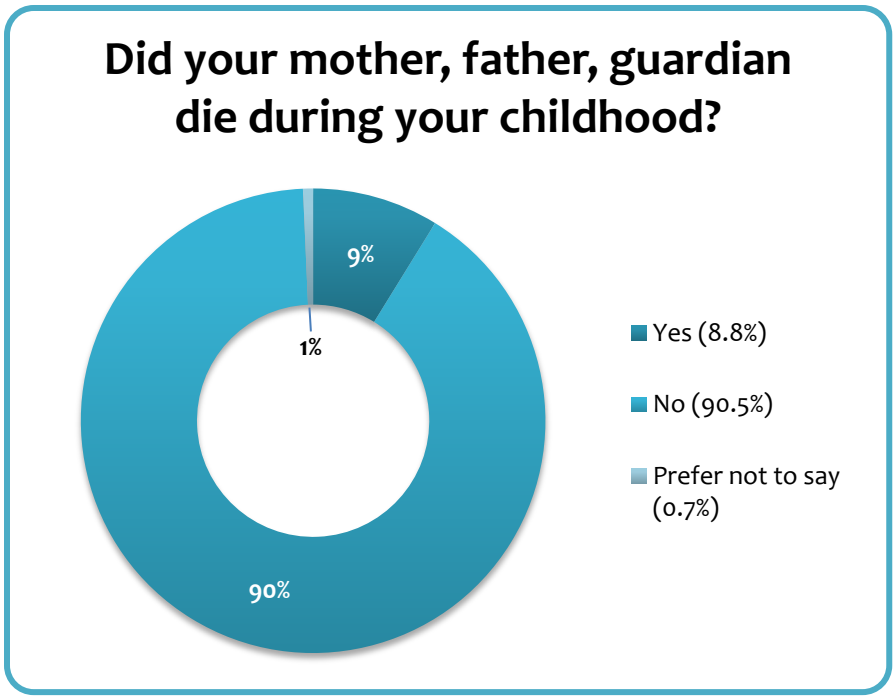
Were your parents ever separated or divorced?



After deployment, feedback was submitted regarding the wording of this question.

The individual indicated that their parents were never married and therefore was unsure how to answer this question.

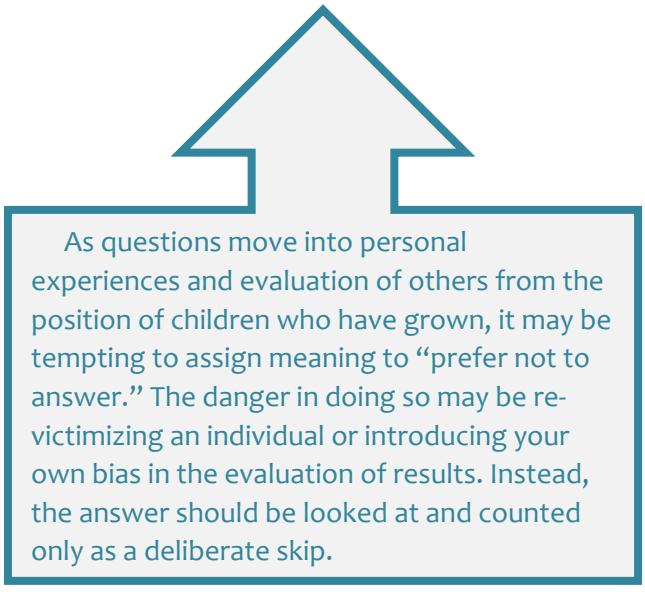
In future iterations of the survey, this will be clarified.



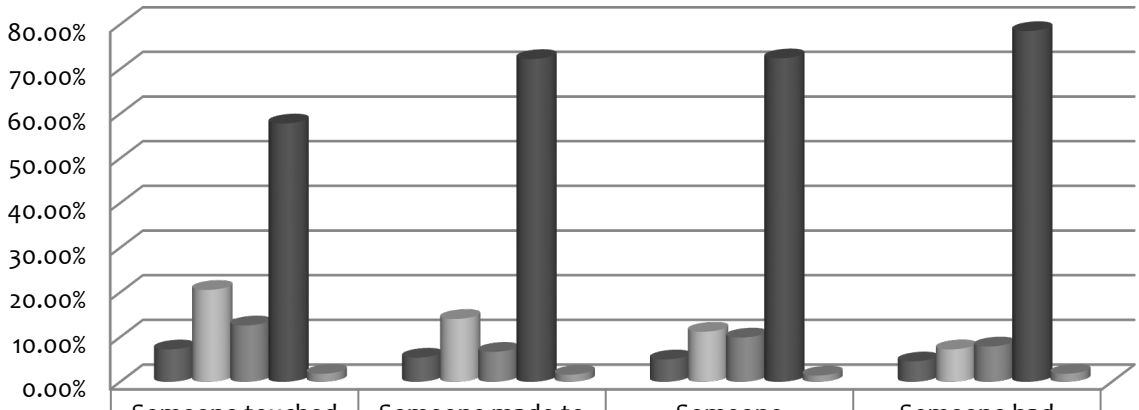
Childhood Relationship with Parents/ Guardians and Family Questions (Between Members)	Responses[a]	Percentage
Did you see or hear a parent or household member in your home being yelled at, screamed at, sworn at, insulted, or humiliated?	Most of the time	12.7%
	Sometimes	50.8%
	Never	36.4%
	Prefer not to say	0.1%
Did you see or hear a parent or household member in your home being slapped, kicked, punched, or beaten up?	Most of the time	2.5%
	Sometimes	24.6%
	Never	72.4%
	Prefer not to say	0.5%
Did you see or hear a parent or household member in your home being hit or cut with an object? (Examples such as a stick (or cane), bottle, club, knife, whip, etc.?)	Most of the time	1.3%
	Sometimes	15.7%
	Never	82.5%
	Prefer not to say	0.5%

[a] For questions in this and subsequent sections, where the perception is based on memory and a participant's interpretation of events, the response option of "Don't know/ Not sure" has been removed.

Childhood Relationship with Parents/ Guardians and Family Questions (Directed at Respondent)	Responses	Percentage
Did a parent, guardian or other household member yell, scream or swear at you, insult or humiliate you?	Most of the time	5.44%
	Sometimes	55.04%
	Never	38.82%
	Prefer not to say	0.7%
Did a parent, guardian or other household member threaten to, or actually, abandon you or throw you out of the house?	Most of the time	2%
	Sometimes	21.2%
	Never	76.3%
	Prefer not to say	0.5%
Did a parent, guardian or other household member spank, slap, kick, punch, or beat you up?	Most of the time	2.3%
	Sometimes	59.4%
	Never	38.3%
	Prefer not to say	0%
Did a parent, guardian or other household member hit or cut you with an object, such as a stick (or cane), bottle, club, knife, whip, etc.?	Most of the time	0.9%
	Sometimes	20.7%
	Never	78%
	Prefer not to say	0.4%



Child Sexual Abuse



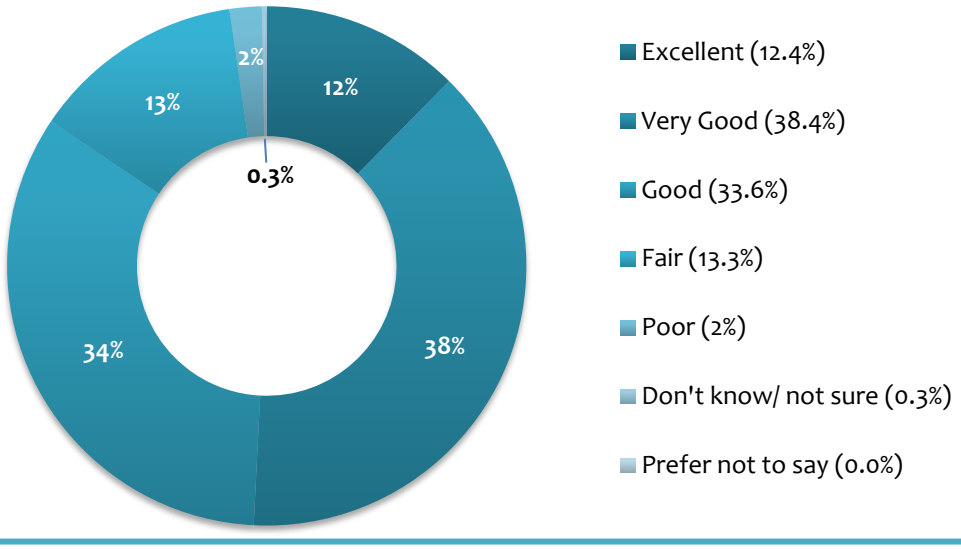
	Someone touched or fondled in a sexual way, when unwanted	Someone made to touch another person in a sexual way, unwanted	Someone attempted oral, anal, or vaginal intercourse, unwanted	Someone had oral, anal, or vaginal intercourse, unwanted
Many times	7.24%	5.40%	5.00%	4.55%
A few times	20.54%	14.05%	11.20%	7.25%
Once	12.60%	6.70%	9.90%	7.90%
Never	57.82%	72.25%	72.40%	78.50%
Prefer not to say	1.80%	1.60%	1.40%	1.80%

Childhood Experiences Questions	Responses	Percentage
How often were you bullied?	Many times	18.86%
	A few times	49.48%
	Once	7.56%
	Never	24.10%
	Prefer not to say	0.00%
How often were you in a physical fight? (Not necessarily related to bullying.)	Many times	4.5%
	A few times	33.5%
	Once	23.9%
	Never	37.9%
	Prefer not to say	0.2%
How often do you feel that you were treated unfairly as a result of your race?	Most of the time	3.6%
	Sometimes	47.3%
	Never	48.6%
	Prefer not to say	0.5%

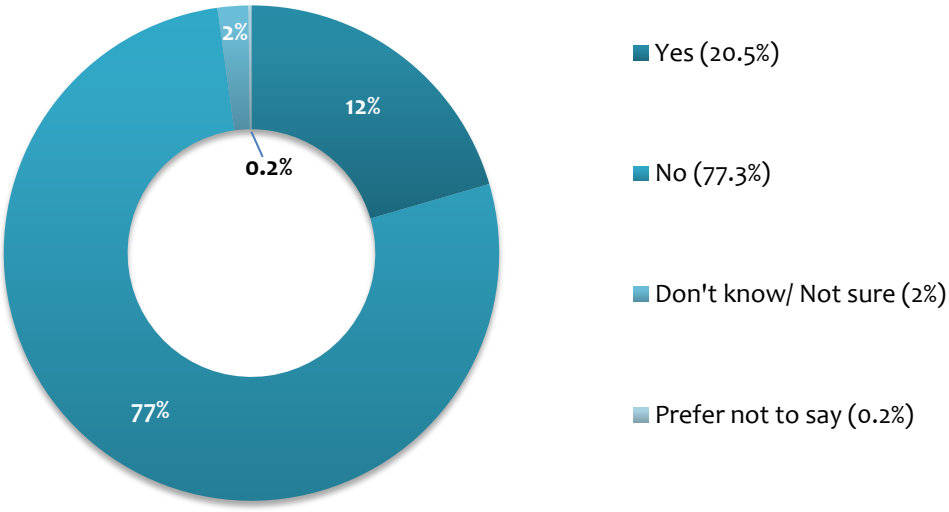
Childhood Peer & Community Experiences Questions	Responses	Percentage
Did you see or hear someone being beaten up in real life?	Many times	8.6%
	A few times	40.4%
	Once	14.1%
	Never	36.9%
	Prefer not to say	0%
Did you see or hear someone being stabbed or shot in real life?	Many times	1.4%
	A few times	7.2%
	Once	9.5%
	Never	81.7%
	Prefer not to say	0.2%
Did you see or hear someone being threatened with a knife or gun in real life?	Many times	2.3%
	A few times	12.6%
	Once	13.3%
	Never	71.6%
	Prefer not to say	0.2%
Did you have a friend or family member die in a road traffic accident?	Many times	2%
	A few times	25%
	Once	24.6%
	Never	48.2%
	Prefer not to say	0.2%
Did you see or hear someone in a road traffic accident get hurt?	Yes	68.5%
	No	30.8%
	Prefer not to say	0.7%

CURRENT LIFESTYLE AND DIAGNOSES IN ADULTHOOD (SECTIONS 8 & 9)

Would you say that in general your health is-



Was there a time in the past 12 months when you needed to see a doctor, but could not because of cost?

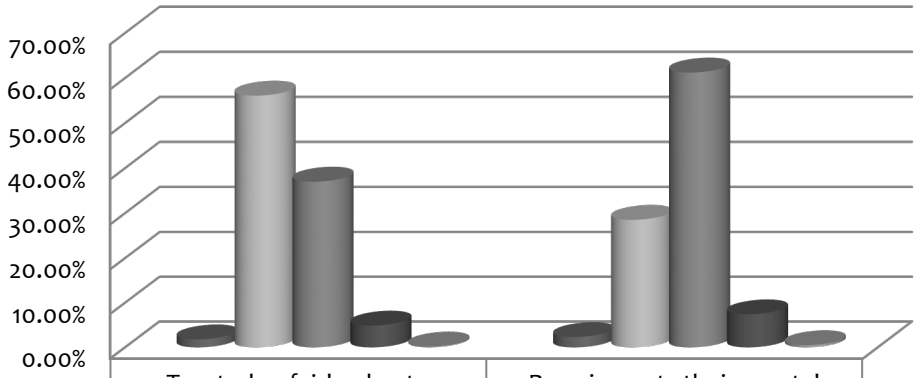


Current Diagnoses Questions	Responses	Percentage
Heart attack, heart disease, high blood pressure, or stroke	Yes	25.1%
	No	74%
	Don't know/ Not sure	0.9%
	Prefer not to say	0%
Asthma	Yes	28.3%
	No	71%
	Don't know/ Not sure	0.7%
	Prefer not to say	0%
Depression (chronic sadness), anxiety, or mental illness	Yes	38.2%
	No	59.6%
	Don't know/ Not sure	2.2%
	Prefer not to say	0%
Diabetes[a]	Yes	7.9%
	No	91.5%
	Don't know/ Not sure	0.6%
	Prefer not to say	0.0%
Cancer	Yes	7.4%
	No	92.3%
	Don't know/ Not sure	0.15%
	Prefer not to say	0.15%
Overweight or Obese	Yes	47.74%
	No	51.74%
	Don't know/ Not sure	0.52%
	Prefer not to say	0.00%

[a]The survey does not specify a type or the full name Diabetes mellitus, as this can lead to unintended under-reporting. There are also multiple colloquial or conversational ways to label Diabetes mellitus, for example "sugar" or "sweet," however the validated structure does not include these unique cultural examples, when relying on healthcare provider prescribed information.

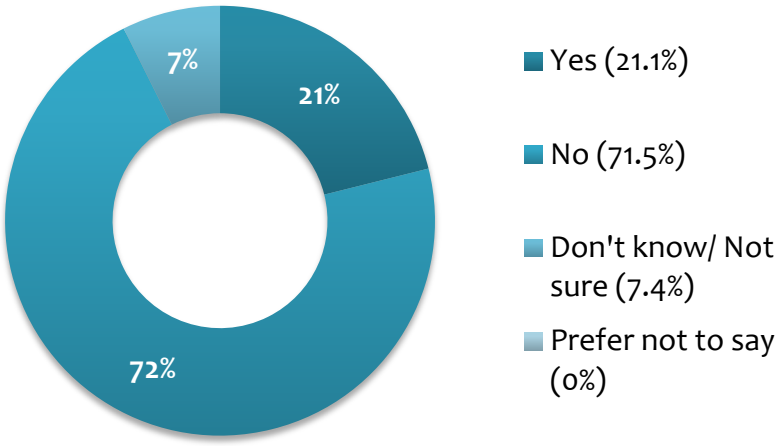
[b]All conditions indicated are pre-empted by asking if the participant has had diagnosis confirmed by a qualified health provider.

Perceived Impact of Race



	Treated unfairly, due to race	Race impacts their mental and/or emotional well-being
Most of the time	1.80%	2.33%
Sometimes	56.10%	28.53%
Never	37.00%	61.22%
Don't know/ Not sure	4.90%	7.42%
Prefer not to say	0.20%	0.50%

Difficulty concentrating, remembering, or making decisions

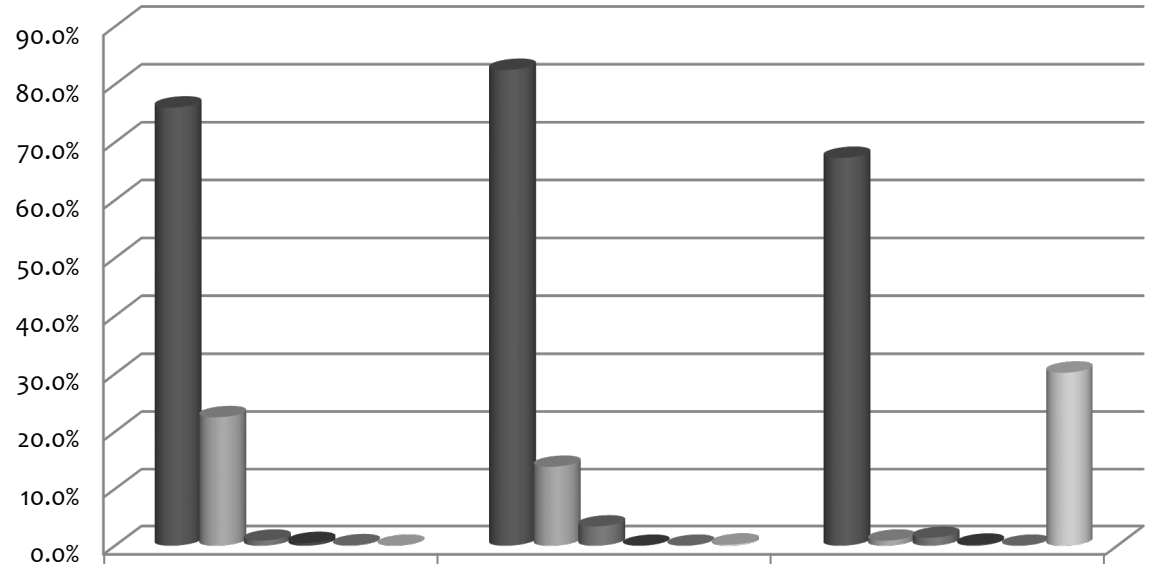


In earlier iterations of the survey, in the English online form only, the additional questions reflected suggested verbiage of "Refused" in place of the consistently used "Prefer not to say." Often in questionnaires, "Refused" is used as a way to motivate individuals to answer or recognise that not providing information is a refusal to answer a question. As this study deals with sensitive topics and wording integral to experiences that are often guarded by participants, we chose to amend the options, with confirmation from the experts who originally provided the questions and answer options for validation.

Current Lifestyle or Behaviour Question	Responses	Percentage
Have you smoked at least 100 tobacco cigarettes in your entire life?	Yes	29.4%
	No	69.5%
	Don't know/ Not sure	1.1%
	Prefer not to say	0%
During the past 12 months, have you stopped smoking for one day or longer because you were trying to quit smoking?	Yes	10.4%
	No	16.6%
	Does not apply/ Do not smoke	72.4%
	Don't know/ Not sure	0.2%
	Prefer not to say	0.4%
During the past 30 days, how many days per week or per month did you have at least one drink of any alcoholic beverage such as beer, wine, a malt beverage or liquor?[a]	0 drinks per month	30.6%
	1-5 drinks per month	42.9%
	6-15 drinks per month	16.8%
	16 or greater drinks per month	9.7%
In your adult life have you ever been sent to jail or prison?	Yes	8.1%
	No	91.7%
	Don't know/ Not sure	0%
	Prefer not to say	0.2%
How often do you feel you can afford what you need?	Most of the time	57.7%
	Sometimes	33.9%
	Never	7.7%
	Don't know/ Not sure	0.5%
	Prefer not to say	0.2%

[a]All responses were collected with a mix of numbers and text, and then converted to a number per month to be reported, here, cumulatively. For per week answers, number of days per month is determined by multiplying by 4 (4 weeks in a month estimation). For answers that included a range, the average of the range was used (I.e. 1.5 drinks per month if 1-2 per month was reported). Statements of "most days in a month" or "the majority of days" we interpreted as 16 days, as the minimum that would be the majority of a 30 day monthly measure. The rules of interpretation were established prior to survey deployment.

Safety Perceptions and Behaviours



	Feeling safe in neighborhood	Use seat belts when driving or riding in a car	Wear a helmet while on a bike
Always	76.0%	82.5%	67.3%
Sometimes	22.5%	13.9%	0.9%
Never	0.9%	3.4%	1.4%
Don't know/ Not sure	0.5%	0.0%	0.2%
Prefer not to say	0.1%	0.0%	0.0%
Does not apply	0.0%	0.2%	30.2%

ANALYTICS FINDINGS

As the frequency and range results show, the complete Bermuda Adverse Childhood Experiences Study (2018) has an incredible wealth of data. As the respondent number differs per question, and caveats for each question choice have colored wording inclusion from the beginning, analytics also has a custom feel.

Below are analytics snapshots with details that have evolved from statistically significant trends only. This by no means represents all that is statistically significant or the limit of analytics that will applied to this data set. Instead, this provides a holistic series of associations that can begin being used for novel interventions. The following findings have been confirmed in the most recent data set analysis of 723. There are more responses to be analysed, as the questionnaires are still available.

- 1 in 2 women in Bermuda have experienced child sexual abuse (defined specifically as physical contact sexual abuse as opposed to the more inclusive definitions of exposure abuse or grooming).
- Bermudians who have lost an individual to road traffic accidents are 11 fold more likely to abide by safety recommendations unrelated to driving or passenger safety.
- Individuals who identified that care in Bermuda is prohibitively costly are 4 times more likely to have multiple self-reported chronic diseases.

● 1 in 5 said they could not afford medical care, when needed.

● Women with higher education (defined as beyond undergraduate college) are 4 fold more likely to have at least one chronic non-communicable disease.

● Parental misunderstanding and verbal abuse witnessing are two of the most commonly reported household dysfunctions in Bermuda. For those who included both of these dysfunctions in their responses about childhood, also reported inability to concentrate at an 8 fold higher rate.

● In Bermuda, there is a statistically significant association between substance abuse, risk seeking behaviours, and illnesses like asthma. The relationship of environmental risk and the respiratory system is highlighted in this finding, which is also historically linked to increasing the likelihood of having heart disease.

● Trauma indicators, collectively shows significant community trauma in Bermuda, where witnessing abuse or loss shows the same risk outcomes with co-morbidity (2 or more chronic diseases, listed) as those who experienced abuse or loss, first hand.

● Health expenditure, alone, in Bermuda accounts for 12% of the country's GDP, annually, which is over $700 million. According to ACEs economics, a true 10% reduction in ACEs prevalence could account for the entire health expenditure budget, in one year.

● When modelled, a negative linear relationship exists between disease recognition and overall health assessment. Bermudians are more likely to indicate a negative state of health without indicating a specific disease state.

● Responses show 1 in 2 have experienced some form of bullying in their childhood, with individuals from all races reporting they have felt treated unfairly due to their race. As a result of bullying and racism, there is an 8-fold increase in odds of having a mental illness or reporting an inability to focus or function due to lack of concentration.

● 1 in 4 witnessed a parent or household member being physically abused, while 3 out of 5 people directly experienced physical abuse during their childhood (either from within or outside of the household).

● 1/3 of respondents lived in a household where substance abuse was an issue, as a child.

● 1 in 10 lived in a household where a member of the family was sent to jail or prison.

● The addition of new domains and multiple options of response likely contributed to the over 90% of respondents sharing they have at least one adverse childhood experience to report (compared to the initial study where 65% of respondents reported at least one adverse childhood experience).

Discussion

As the results demonstrate, the demographics and experiences of those who participated in the first wave of ACEs studies are varied and represent a wide variety of Bermuda's people. The common limitation to generalizing study results to the broader country usually is due to the size of the sample. In this case, based on sample size calculations and as corroborated by national standards, the volume of respondents is sufficient. In the review of published demographics in Bermuda, however, there is a significant difference. Due to the overwhelming response by females being willing to participate, there was a far less rigorous response from males. Thus, all conclusive associations drawn from this questionnaire would likely be more representative of females, as gender appears to be a mitigating factor. It is crucial to make this consideration with the understanding that recruitment for survey participation, at all stages, was not biased on gender. All efforts were either nationally motivated or aimed specifically at men's sports clubs and social gatherings.

Another confounding or potentially unknown variable is in the effect of health literacy within the population. Many questions in the survey regarding current lifestyles and perceptions are concepts that must be categorically evaluated and have answers that could conceal misinterpretation, due to the multiple choice format.

Finally, feedback received after participants submitted their questionnaires was often in relation to discomfort they felt in responding to the questionnaire, especially in circumstances where one or both of their parents have passed away. Being able to answer truthfully, for example that there was sometimes screaming in their childhood home, comes with shame or guilt, as though the memories are being betrayed. This type of response was not predicted or prepared for, from the literature reviews available when the questionnaire was drafted. Follow up indicates that this is a unique finding linked to the strong cultural basis of community integral to Bermuda and supports further investigation, with qualitative sections to provide space for feedback.

The content, itself, within the Bermuda Adverse Childhood Experiences Study demonstrates the pervasive presence of each domain, in Bermuda. Action to prevent and mitigate the consequences of ACEs, as shown by the risk behaviours and chronic diseases in adulthood, is essential to prevent the negative effects of ACEs and improve the health of Bermuda's population. The following section aims to provide evidence of common approaches used in interventions that seek to prevent ACEs and mitigate their impact in not only Bermuda, but also in the world at large.

Additional Applications and Next Steps

Addressing ACEs in Bermuda, at a comprehensive level, has the potential to improve the health, wellbeing, and future for the entire population. This undertaking would improve health outcomes, promote higher success in education, and decrease interaction with the criminal justice system, as is shown by the annual evaluations in the U.S.[44] Achieving the goals of developing an ACEs-aware vision requires investments in innovative trauma-informed approaches, such as an island-wide strategy to raise awareness of ACEs, provide early screenings for ACEs, and promote the use of trauma-informed approaches. These are all critical starting points that will mitigate the long-term harmful effects of adverse childhood experiences on children and families.

Prevention strategies should include activities that address ACEs on multiple levels. This approach is more likely to sustain prevention efforts over time than any single strategy. Progress to address and advance ACEs awareness also requires a comprehensive engagement of

diverse stakeholders, including governmental, non-profit, private sector, and philanthropic agencies, as well as advocates for youth and families.

The following opportunities are supported by the findings of the Bermuda Adverse Childhood Experiences Study (2018) as well as stakeholder engagement, in determining prescriptive next steps. Therefore, options are offered from the perspective of community participants with tangible deliverables and specific inputs to efficiently bring action.

AREAS OF OPPORTUNITY FOR BERMUDA

We need to reach a "tipping point" of awareness throughout the community as opposed to only in those who work intimately in the field. Success in this regard would lead to a state of advanced collaborative engagement, rooted in problem solving, that cannot be de-railed.

Actions to mitigate the consequences of ACEs, and then to prevent them, are essential to counteract the negative effects of ACEs and improve the physical and mental health of Bermuda's population.

There are five areas of opportunity that provide a set of possible action steps that can be the catalyst for change. An ACEs task force would be most efficient. The group, comprised of key cross-sector stakeholders and community voices, should be put in place to strategize further the options presented here and in the growing ACEs evidence base. The ultimate goal of having a national ACEs informed initiative must include the following:

1. **Promote community awareness of ACEs.**
   a) Increase public understanding of ACEs through media campaigns, discussion groups, and community events.
   b) Focus advocacy efforts on the voices of those directly impacted by ACEs.
   c) Support multi-sector partnerships to strengthen the coordination of efforts in the community.
   d) Encourage all businesses to become trauma informed.

The following are examples of strategies that can help raise awareness of ACEs in Bermuda:

- We must first raise awareness and the understanding of ACEs through the delivery of a coordinated local campaign. The campaign could be developed from this strategy and overseen by the aforementioned task force. A network of ACEs champions from various organizations across the island could be established in order to facilitate effective communication of key messages.

- One suggestion is to use the ACEs film, *Resilience®* as a way to engage the community. The film can help to generate awareness of ACEs in each community and help to promote a discussion about ACEs and their impact on health conditions. This would start the conversation about ACES that can then begin to reverse the negative and cultural stigmas and impacts of ACEs and, thus, begin to decrease new incidences of childhood trauma. A primary goal is to normalize the ACEs conversation via engaging community events and to create safe spaces for children and their families in which to connect, learn, and play. See **Appendix E: Additional Resources** for more information.

- Another film, the *Paper Tigers®*, is a documentary that can be used to raise awareness of the emotional/ behavioural needs of children and to assist school and community agency leaders and staff in moving from a traditional focus on punitive discipline to a compassion-focused and trauma-sensitive approach.

This is consistent with a growing international emphasis on reducing student encounters with schools' disciplinary actions that have increasingly been found to have toxic and damaging effects on children and youth, even contributing to the "school-to-prison pipeline"[45,46] See **Appendix E: Additional Resources** for more information.

- Provide a framework for the general Bermuda community and specific organizations to use as they think through the role(s) they can play in strategizing approaches to ACEs. The goal of such a framework is to help people understand how the more beneficial ACEs-informed approach can be built into existing activities, as well as to provide a common language for talking about ACEs and building resilience. This framework would need to be a living document that continues to evolve and change over time as appropriate for each Bermudian community's specific needs.

- Additional recommendations by the CDC include strategies that focus on changing norms, environments, and behaviours in ways that can prevent ACEs from happening in the first place. By addressing the conditions that give rise to ACEs and simultaneously addressing the needs of children and parents, these strategies take a multi-generational approach that can help to prevent ACEs and can ensure safe, stable, and nurturing relationships and environments.[47]

2. Support parents and caregivers (family members and others involved in the day-to-day care of children)

The science of child development and the core capabilities of adults point to a set of three "design principles" that policymakers and practitioners in many different sectors can use to improve outcomes for children and families. These three principles can guide decision makers as they choose among policy alternatives, design new approaches, and shift existing practice in ways that will best support building healthy brains and bodies.

The three core principles are to:

- Strengthen core life skills such as executive function and self-regulation skills
- Support responsive relationships for children and adults
- Reduce the source of stress in the lives of children and families

Parents and caregivers whose children face a high risk of exposure to ACEs often have an overwhelming number of competing demands for their time and energy. Even where there are programmes that can alleviate financial and familial stresses, there may be other hurdles that keep eligible caregivers from participating.

Compounding existing struggles or as a burden unto itself, lack of access to a living wage, stable housing, affordable healthcare, and/or other basic needs makes it more difficult for parents to provide the kind of home environment children need to thrive. Many families in Bermuda, and around the globe, face economic and social stressors that create challenging conditions for child development.

On an individual level, policies can focus on skill-building for both children and adults; at the human services level, policies might focus on the critical function of caring relationships in promoting healthy development, supportive parenting, and economic productivity; and at the systemic or societal level, policies can emphasize reducing the sources of stress that can negatively impact both children and adults with lifelong consequences.

The Centers for Disease Control & Prevention (CDC) also offer several strategies that can

prevent ACEs, as well as strategies to mitigate the harms of ACEs, through policy work. The evidence indicates that ACEs can be prevented through the presence of safe, stable, and nurturing relationships and environments, ultimately essential in preventing childhood maltreatment to ensure that children reach their full potential as healthy and productive citizens.[48,49]

3. Provide training for and professional development in trauma-informed care.

a) Ensure that those who work with children and families know about ACEs and their related protective factors and are aware of available resources that can provide the needed support.

Strengthening child care providers' expertise in trauma, social, and emotional health, as well as positive behavioural management will provide more tools to help systematically recognise and address the negative impacts of ACEs. In addition, building effective avenues for communication between providers, social services, medical professionals, law enforcement, and others may help to detect ACEs early and exponentially increase the benefits of coordinated care efforts.

b) Train education and behavioural health care staff to recognise the signs of ACEs and how to address them appropriately.

Children and families seeking support from service providers must experience a safe and inviting therapeutic environment that has been built on mutual trust. This requires providers to have the relevant behavioural health expertise and training to address their clients' needs.

c) Adopt trauma-informed care practices throughout all levels of organizations.

To be sustainable, individual efforts made by child- and family-serving professionals to become trauma-informed must be supported by the organizational environment in which they work. For example, a teacher may be committed to a restorative, centered classroom, but the administration's discipline policy is punitive. For restoration to take place, all leadership must actively adopt and support trauma-informed practices.

d) Invest in evidence-based behavioural health approaches for children.

Integrating modalities beyond the traditional counselling and therapy practices can strengthen behavioural health support for parents and children, as well as dialectical therapies for adults. For example, numerous studies have shown the positive impact of mindfulness for helping children and adults to regulate their emotions.[50,51]

4. Advance policies and practices that help children and families thrive.

Advocacy efforts often require a multi-pronged approach in order to fully address the many factors that can decrease the risk of ACEs or help reduce their effects. Examples of policy areas that are especially important in supporting children and families are as follow:

a) Advocate for specific ACEs-focused policies in early childhood care environments and education centres.

During the early years, infants and children spend a great amount of time in child care environments. According to the Harvard Center on the Developing Child, it is critical that these environments provide high-quality opportunities for cognitive, social, and emotional development. A critical step is training child care workers and teachers on ACEs and trauma-informed practices.

b) Educate policy makers about ACEs, create opportunities for funding, and make relevant policy changes to holistically address ACEs from prevention to ameliorating the effects.

To support effective prevention and treatment strategies through policies, Bermuda policymakers must be knowledgeable about the

causes and impacts of ACEs. Addressing improves social and emotional well-being, and presents fiscal opportunities for government cost savings as individuals engage more productively in society.

c) Create opportunities for cross-sectoral collaboration in policy development, advocacy, and implementation.

Bringing together various sectors in order to leverage their collective strengths will create opportunities for the type of cross-collaboration that supports more effective, sustainable solutions, for ACEs and beyond.

5. Collect, analyse, and share data and findings from research and practice, while funding pilots for novel interventions.

a) Support research, data collection, and effective data-sharing initiatives to improve everyone's understanding of ACEs and their effects in Bermuda, for both children who may be impacted and adults who actively live with the prior identified trauma. Bermuda has many opportunities to increase data collection and analysis of ACEs.

Agencies could work to connect data longitudinally from childhood to adulthood as they evaluate the connections between ACEs and outcomes such as health, academic attainment, and financial security.

Foundations and businesses can provide financial support for evidence-based or promising approaches to address ACEs that may not be eligible for government funding. Public, private, and philanthropic funding can provide important support for capacity building, such as training and programme evaluation, which can strengthen existing service provision and inform future policy and practice.

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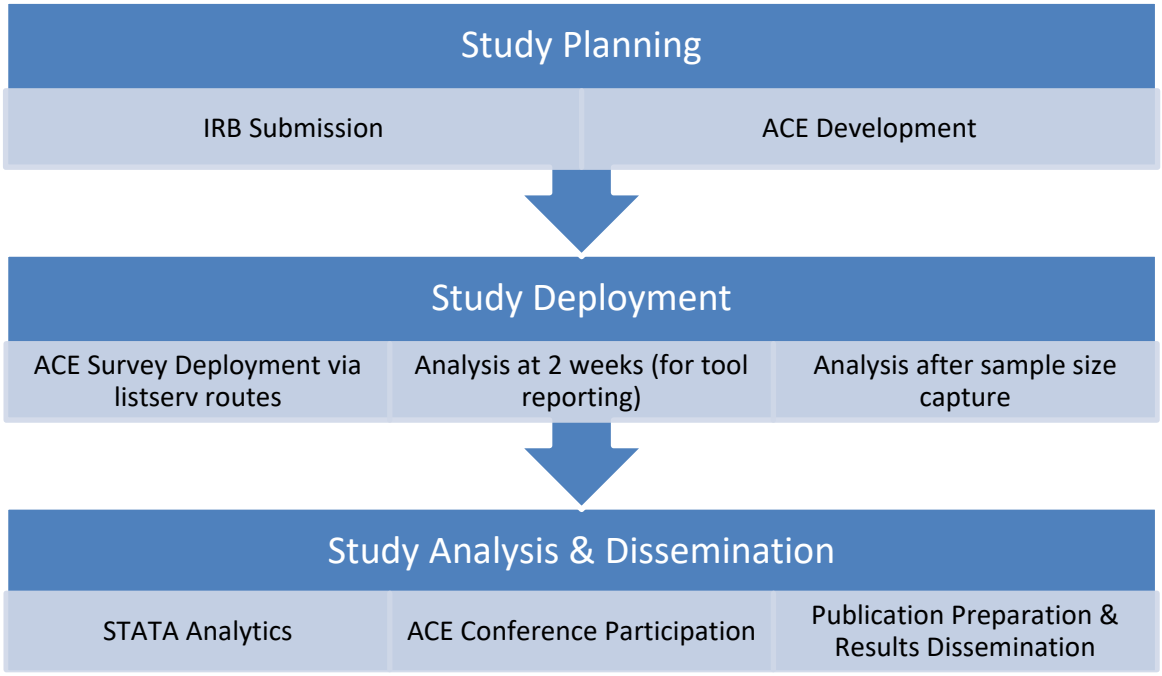
Appendix A: Study Schematic

The following research schematic was developed to demonstrate the major milestones or deliverables of the study and to offer guidance for those not conducting the research, directly.



The study schematic is also a necessary component for the Research Ethics Committee review of novel human subjects research protocols.

Appendix B: Informed Consent (English & Portuguese)

For any research conducted in Bermuda that involves humans, an application to the Bermuda Hospitals Board's Research Ethics Committee should be submitted and approved. The Research Ethics Committee has been accredited as a part of the hospital with Exemplary Standing and uses internationally validated criteria to evaluate submitted protocols. Integral to any human subjects research is an easy to understand informed consent form. The following are the English and Portuguese informed consent forms that participants submitted prior to receiving the 2018 Bermuda Adverse Childhood Experiences Study questionnaire. The consent form remained consistent and applicable for all formats regardless of questionnaire delivery. The Portuguese informed consent, presented here, was translated (with great help) by representatives from the Honorary Consulate to Portugal.

Adverse Childhood Experiences Bermuda Questionnaire

Introduction

This survey is the Adverse Childhood Experiences Bermuda Questionnaire. This is designed to collect information from adults in Bermuda about events they experienced during the first 18 years of their lives and their lives now.

Data Collection

We will collect information from participants throughout Bermuda. The information will be gathered via print, phone, and electronic surveys.

What's Involved

We will ask you questions about your age, education, employment, family background, community experiences, and your current lifestyle. Some of the questions may be hard to answer or may make you feel like you would like to talk to someone about your experiences. After completing the survey, please visit the Family Centre resource page at https://www.tfc.bm/resource-centre/service-partners or the Bermuda Health Council health professionals resource page at http://www.bhec.bm/registered-hsp/ for more information and support options.

Your Rights

It is your right, at any time to:

- Decline to take part in the study
- Withdraw your consent at any time
- Decline to answer any questions in the interview that you do not wish to answer

Your information will be kept confidential and at no time will include your name or other identifiers like location or IP address, as appropriate to how you take the survey.

Results

The results will be collected through paper, phone, and electronic options. After collection, the results will be publicly released.

Instructions

Please use a pen or pencil to indicate your answer to each question. Each question allows for refusal, as needed.

Questionário de Experiências Adversas de Infância (EAI) das Bermudas

Este inquérito é o Questionário de Experiências Adversas de Infância das Bermudas (EAI). Foi concebida para recolher informações de adultos nas Bermudas, sobre acontecimentos que eles sofreram durante os primeiros 18 anos das suas vidas e as suas vidas agora. A pesquisa, como parte do estudo EAI, é fornecida em parceria com o Centro da Família e o Conselho de Saúde das Bermudas.

Recolheremos informações de participantes em todas as Bermudas. As informações serão recolhidas através de pesquisas eletrônicas, telefónicas e em papel.

Vamos fazer perguntas sobre a sua idade, educação, emprego, antecedentes familiares, experiências comunitárias e o seu estilo de vida atual. Pode ser difícil responder a algumas das perguntas ou elas podem faze-lo sentir que queria falar com alguem sobre as suas experiências. Depois de concluir o inquérito, pode visitar a página de recursos do Centro da Família no https://www.tfc.bm/resource-centre/service-partners ou a página dos profisionais de saúde no Conselho de Saúde das Bermudas no http://www.bhec.bm/registered-hsp/ para mais informações e apoio.

O inquérito leva menos de dez minutos para a maioria das pessoas. Por favor responda as perguntas em uma sessão porque as suas respostas entre as páginas não serão guardadas.

É o seu direito, a qualquer momento de:
-Recusar a participar no estudo
-Retirar o seu consentimento a qualquer momento
-Recusar a responder a qualquer pergunta na entrevista a que não quer responder

A sua informação será mantida confidencial e o inquérito nunca registará o seu nome ou local.
Os resultados serão publicados após a terminação da recolha de dados.

Se quiser mais informações sobre as perguntas neste questionário, uma cópia impressa deste pesquisa, ou mais informação sobre os serviços de saúde mental ou de saúde física relacionados com este questionário, por favor email stephanie@tfc.bm ou tdhines@gov.bm.

Appendix C: Final Deployed Questionnaire (English- Printed)

As noted in the Methodology section, above, the following is the printed format version of the Bermuda Adverse Childhood Experiences Study (2018). Available at: **https://forms.gle/v1i7gGVbT88iZspK8**. Please only participate once.

0	Demographics Information	
0.1	Sex	☐ Male ☐ Female ☐ Prefer not to say
0.2	What is your date of birth?	Day [ ] [ ] Month [ ] [ ] Year [ ] [ ] [ ] [ ]
0.3	What is your racial/ ethnic background?	☐ Black ☐ White ☐ Mixed ☐ Asian ☐ Other ☐ Prefer not to say
0.4	What is the highest level of education you have completed?	☐ Less than Primary School ☐ Primary School Completed ☐ Secondary/ High School Completed ☐ College/University Completed ☐ Post University Completed ☐ Prefer not to say
0.5	Which of the following best describes your main work status over the last 12 months?	☐ Government Employee ☐ Non-government Employee ☐ Self- employed ☐ Student ☐ Homemaker ☐ Retired ☐ Unemployed (able to work) ☐ Unemployed (unable to work) ☐ Prefer not to say
0.6	How many years did you live in Bermuda, under the age of 18?	____ years ☐ Prefer not to say
0.7	How many years have you lived in Bermuda, over the age of 18?	____ years ☐ Prefer not to say
0.8	What is your marital status?	☐ Married ☐ Living as Couple ☐ Divorced or Separated ☐ Single ☐ Widowed ☐ Other ☐ Prefer not to say

1	Relationship with Parents/ Guardians	
When you were growing up, during the first 18 years of your life…		
1.1	Did your parents/ guardians understand your problems and worries?	☐ Most of the time ☐ Sometimes ☐ Never ☐ Don't Know/ Not Sure ☐ Prefer not to say
1.2	Did your parents/ guardians **truthfully** know what you were doing with your free time when you were not at school or work?	☐ Most of the time ☐ Sometimes ☐ Never ☐ Don't Know/ Not Sure ☐ Prefer not to say
1.3	How often did your parents/ guardians **not** give you enough food?	☐ Most of the time ☐ Sometimes ☐ Never ☐ Don't Know/ Not Sure ☐ Prefer not to say
1.4	Were your parents/ guardians too high or too drunk (intoxicated) to take care of you?	☐ Most of the time ☐ Sometimes ☐ Never ☐ Don't Know/ Not Sure ☐ Prefer not to say
1.5	How often did your parents/ guardians **not** send you to school even when it was a school day?	☐ Most of the time ☐ Sometimes ☐ Never ☐ Don't Know/ Not Sure ☐ Prefer not to say
2-5	Family & Lifestyle Environment	
When you were growing up, during the first 18 years of your life…		
2.1	Did you live with a household member who was a problem drinker or alcoholic, or misused street or prescription drugs?	☐ Yes ☐ No ☐ Prefer not to say
2.2	Did you live with a household member who was depressed, suicidal, or had a mental illness?	☐ Yes ☐ No ☐ Prefer not to say
2.3	Did you live with a household member who was ever sent to jail or prison?	☐ Yes ☐ No ☐ Prefer not to say
2.4	Were your parents ever separated or divorced?	☐ Yes ☐ No ☐ Prefer not to say
2.5	Did your mother, father, guardian die during your childhood?	☐ Yes ☐ No ☐ Prefer not to say

SEE NEXT PAGE

These next questions are about certain things you may actually have heard or seen IN YOUR HOME. These are things that may have been done to another household member but not necessarily to you.		
When you were growing up, during the first 18 years of your life...		
3.1	Did you see or hear a parent or household member in your home being yelled at, screamed at, sworn at, insulted or humiliated?	☐ Most of the time ☐ Sometimes ☐ Never ☐ Prefer not to say
3.2	Did you see or hear a parent or household member in your home being slapped, kicked, punched or beaten up?	☐ Most of the time ☐ Sometimes ☐ Never ☐ Prefer not to say
3.3	Did you see or hear a parent or household member in your home being hit or cut with an object? (Examples such as a stick (or cane), bottle, club, knife, whip etc.?)	☐ Most of the time ☐ Sometimes ☐ Never ☐ Prefer not to say
These next questions are about certain things that may have happened to YOU.		
When you were growing up, during the first 18 years of your life...		
4.1	Did a parent, guardian or other household member yell, scream or swear at you, insult or humiliate you?	☐ Most of the time ☐ Sometimes ☐ Never ☐ Prefer not to say
4.2	Did a parent, guardian or other household member threaten to, or actually, abandon you or throw you out of the house?	☐ Most of the time ☐ Sometimes ☐ Never ☐ Prefer not to say
4.3	Did a parent, guardian or other household member spank, slap, kick, punch or beat you up?	☐ Most of the time ☐ Sometimes ☐ Never ☐ Prefer not to say
4.4	Did a parent, guardian or other household member hit or cut you with an object, such as a stick (or cane), bottle, club, knife, whip etc.?	☐ Most of the time ☐ Sometimes ☐ Never ☐ Prefer not to say
These next questions are about certain things YOU may have experienced.		
When you were growing up, during the first 18 years of your life...		
5.1	Did someone touch or fondle you in a sexual way when you did not want them to?	☐ Many times ☐ A few times ☐ Once ☐ Never ☐ Prefer not to say

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5.2	Did someone make you touch their body in a sexual way when you did not want them to?	☐ Many times ☐ A few times ☐ Once ☐ Never ☐ Prefer not to say
5.3	Did someone attempt oral, anal, or vaginal intercourse with you when you did not want them to?	☐ Many times ☐ A few times ☐ Once ☐ Never ☐ Prefer not to say
5.4	Did someone actually have oral, anal, or vaginal intercourse with you when you did not want them to?	☐ Many times ☐ A few times ☐ Once ☐ Never ☐ Prefer not to say
6-7	**Peer & Community Environment**	
These next questions talk about BEING BULLIED when you were growing up. Bullying is when a young person or group of young people say or do bad and unpleasant things to another young person. It is also bullying when a young person is teased a lot in an unpleasant way or when a young person is left out of things on purpose. It is not bullying when two young people of about the same strength or power argue or fight or when teasing is done in a friendly and fun way.		
When you were growing up, during the first 18 years of your life…		
6.1	How often were you bullied?	☐ Many times ☐ A few times ☐ Once ☐ Never ☐ Prefer not to say
6.2	How often were you in a physical fight? (*Not necessarily related to bullying)*	☐ Many times ☐ A few times ☐ Once ☐ Never ☐ Prefer not to say
6.3	How often do you feel that you were treated unfairly as a result of your race?	☐ Most of the time ☐ Sometimes ☐ Never ☐ Prefer not to say

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These next questions are about how often, when you were a child, YOU may have seen or heard certain things in your NEIGHBORHOOD OR COMMUNITY (not in your home or on TV, movies, or the radio).		
When you were growing up, during the first 18 years of your life…		
7.1	Did you see or hear someone being beaten up in real life?	☐ Many times ☐ A few times ☐ Once ☐ Never ☐ Prefer not to say
7.2	Did you see or hear someone being stabbed or shot in real life?	☐ Many times ☐ A few times ☐ Once ☐ Never ☐ Prefer not to say
7.3	Did you see or hear someone being threatened with a knife or gun in real life?	☐ Many times ☐ A few times ☐ Once ☐ Never ☐ Prefer not to say
7.4	Did you have a friend or family member die in a road traffic accident?	☐ Many times ☐ A few times ☐ Once ☐ Never ☐ Prefer not to say
7.5	Did you see or hear someone in a road traffic accident get hurt?	☐ Yes ☐ No ☐ Prefer not to say
8-9	**Current Lifestyle**	
These next questions are about your physical, emotional, and mental health, now…		
8.1	Would you say that in general your health is--	☐ Excellent ☐ Very Good ☐ Good ☐ Fair ☐ Poor ☐ Don't Know/ Not Sure ☐ Prefer not to say
8.2	Was there a time in the past 12 months when you needed to see a doctor but could not because of cost?	☐ Yes ☐ No ☐ Don't Know/ Not Sure ☐ Prefer not to say
8.3	Has a doctor, nurse, or other health professional ever told you that you had any of the following or do you have; heart attack, heart disease, high blood pressure, or stroke?	☐ Yes ☐ No ☐ Don't Know/ Not Sure ☐ Prefer not to say

SEE NEXT PAGE

8.4	Has a doctor, nurse, or other health professional ever told you that you had or do you have asthma?	☐ Yes ☐ No ☐ Don't Know/ Not Sure ☐ Prefer not to say
8.5	Has a doctor, nurse, or other health professional ever told you that you had any of the following or do you have; depression (chronic sadness), anxiety, or mental illness?	☐ Yes ☐ No ☐ Don't Know/ Not Sure ☐ Prefer not to say
8.6	Has a doctor, nurse, or other health professional ever told you that you had or do you have diabetes?	☐ Yes ☐ No ☐ Don't Know/ Not Sure ☐ Prefer not to say
8.7	Has a doctor, nurse, or other health professional ever told you that you had or do you have cancer?	☐ Yes ☐ No ☐ Don't Know/ Not Sure ☐ Prefer not to say
8.8	Has a doctor, nurse, or other health professional ever told you that you have been or are overweight or obese?	☐ Yes ☐ No ☐ Don't Know/ Not Sure ☐ Prefer not to say
8.9	Do you have serious difficulty concentrating, remembering, or making decisions, because of physical, mental, or emotional condition(s)?	☐ Yes ☐ No ☐ Don't Know/ Not Sure ☐ Prefer not to say
8.10	How often do you feel that you are treated unfairly as a result of your race?	☐ Most of the time ☐ Sometimes ☐ Never ☐ Don't Know/ Not Sure ☐ Prefer not to say
8.11	How often do you feel that your race impacts your mental and/or emotional well-being?	☐ Most of the time ☐ Sometimes ☐ Never ☐ Don't Know/ Not Sure ☐ Prefer not to say
These next questions are about your life, now…		
9.1	Have you smoked at least 100 tobacco cigarettes in your entire life?	☐ Yes ☐ No ☐ Don't Know/ Not Sure ☐ Prefer not to say
9.2	During the past 12 months, have you stopped smoking for one day or longer because you were trying to quit smoking?	☐ Yes ☐ No ☐ Does Not Apply/ Do Not Smoke ☐ Don't Know/ Not Sure ☐ Prefer not to say

SEE NEXT PAGE

9.3	During the past 30 days, how many days per week or per month did you have at least one drink of any alcoholic beverage such as beer, wine, a malt beverage or liquor?	___ Days per Week ___ Days in Past 30 Days ☐ Don't Know/ Not Sure ☐ Prefer not to say
9.4	In your adult life have you ever been sent to jail or prison?	☐ Yes ☐ No ☐ Don't Know/ Not Sure ☐ Prefer not to say
9.5	How often do you feel you can afford what you need?	☐ Most of the time ☐ Sometimes ☐ Never ☐ Don't Know/ Not Sure ☐ Prefer not to say
9.6	How often do you feel safe in your neighborhood?	☐ Always ☐ Sometimes ☐ Never ☐ Don't Know/ Not Sure ☐ Prefer not to say
9.7	How often do you use seat belts when you drive or ride in a car? Would you say--	☐ Always ☐ Sometimes ☐ Never ☐ Does Not Apply/ Do Not Ride in Car ☐ Don't Know/ Not Sure ☐ Prefer not to say
9.8	How often do you wear a helmet while on a bike? Would you say--	☐ Always ☐ Sometimes ☐ Never ☐ Does Not Apply/ Do Not Ride on Bike ☐ Don't Know/ Not Sure ☐ Prefer not to say

Thank you for your participation in this survey. Your responses will be kept confidential.

END

Appendix D: Final Deployed Questionnaire (Portuguese-Printed)

As noted in the **Methodology** section, the following is the printed format version of the Bermuda Adverse Childhood Experiences Study (2018). The Portuguese version of the questionnaire was translated by representatives from the Honorary Consulate to Portugal. Available at: **https://forms.gle/41xsmSuu33gKJxTo7**. Please only participate once.

0	Informação Demográfica	
0.1	Sexo	□ Masculino □ Feminino □ Prefiro Não Dizer
0.2	Qual é a sua data de nascimento?	Dia [ ] Mês [ ] Ano [ ] [ ] [ ] [ ]
0.3	Qual é a sua raça/origem étnica?	□ Preto □ Branco □ Misturado □ Asiático □ Outro □ Prefiro Não Dizer
0.4	Qual é o nível mais alto de educação que concluiu?	□ Menos de Escola Primária □ Escola Primária Concluida □ Escola Primária/Secundária Concluida □ Universidade Concluida □ Pós-graduação Concluida □ Prefiro Não Dizer
0.5	Qual dos seguintes descreve o melhor o seu estado de trabalho nos últimos 12 meses?	□ Funcionário do Governo □ Empredao não-governamental □ Trabalhador Independente □ Estudante □ Dona de Casa □ Reformado/a □ Desmpregado (Capaz de Trabalhar) □ Desempregadoo (Incapaz de Trabalhar) □ Prefiro Não Dizer
0.6	Quantos anos viveu nas Bermudas antes da idade de 18 anos?	_____ anos □ Prefiro Não Dizer
0.7	Quantos anos viveu nas Bermudas depois da idade de 18 anos?	_____ anos □ Prefiro Não Dizer
0.8	Qual é o seu estado civil?	□ Casado/a □ Vivendo Como Casal □ Divociado/a ou Separado/a □ Solteiro/a □ Viúvo/a □ Outro □ Prefiro Não Dizer

1	Relacionamento com os Pais/Guardiões	
Quando estava a crescer durante os primeiros 18 anos da sua vida…		
1.1	Os pais/guardiões entendam os seus problemas e preocupações?	□ A Maior Parte do Tempo □ As Vezes □ Nunca □ Não Sei/Não Tenho a Certeza □ Prefiro Não Dizer
1.2	Os seus pais **na verdade** sabiam o que estava a fazer com os seus tempos livres quando não estava na escola ou no trabalho?	□ A Maior Parte do Tempo □ As Vezes □ Nunca □ Não Sei/Não Tenho a Certeza □ Prefiro Não Dizer
1.3	Quantas vezes os seus pais/guardiões não lhe alimentaram suficientemente?	□ A Maior Parte do Tempo □ As Vezes □ Nunca □ Não Sei/Não Tenho a Certeza □ Prefiro Não Dizer
1.4	Foram os seus pais/guardiões demasiados sob a influência de drogas ou demasiado bêbados para cuidar de si?	□ A Maior Parte do Tempo □ As Vezes □ Nunca □ Não Sei/Não Tenho a Certeza □ Prefiro Não Dizer
1.5	Quantas vezes os seus pais/guardiões **não** lhe mandaram para a escola mesmo quando foi um dia de escola?	□ A Maior Parte do Tempo □ As Vezes □ Nunca □ Não Sei/Não Tenho a Certeza □ Prefiro Não Dizer
2.5	**Ambiente de Família e o do Estilo de vida**	
Quando estava a crescer durante os primeiros 18 anos da sua vida…		
2.1	Vivia com um membro da família que tinha problemas com álcool ou que era alcoólico/a, ou que utilizava drogas ilegais ou de prescrição?	□ Sim □ Não □ Prefiro Não Dizer
2.2	Vivia com um membro da família que estava deprimido e suicida, ou que tinha uma doença mental?	□ Sim □ Não □ Prefiro Não Dizer
2.3	Vivia com um membro da família que já foi enviado para a prisão ou para a cadeia?	□ Sim □ Não □ Prefiro Não Dizer
2.4	Os seus pais eram separados ou divorciados?	□ Sim □ Não □ Prefiro Não Dizer
2.5	A sua mãe, o seu pai ou guardião morreu durante a sua infância?	□ Sim □ Não □ Prefiro Não Dizer

VER A PÁGINA SEGUINTE

Estas próximas perguntas são sobre coisas que você podia ter visto ou ouvido NA SUA CASA. Estas podem ser coisas que podem ter sido feitas com outro membro da família, mas não necessariamente com você.		
Quando estava a crescer durante os primeiros 18 anos da sua vida...		
3.1	Viu ou ouviu os seus pais ou outro membro da família a gritar como berrar com, ou insultar alguém em casa?	□ Não Sei/Não Tenho a Certeza □ Prefiro Não Dizer
3.2	Viu ou ouviu um dos seus pais ou um membro da sua família a ser esbofeteado, chutado, esmurrado ou espancado?	□ A Maior Parte do Tempo □ As Vezes □ Nunca □ Não Sei/Não Tenho a Certeza □ Prefiro Não Dizer
3.3	Viu ou ouviu um membro da sua família na sua casa a ser batido ou cortado com um objeto? Exemplos tal como um pau (ou bengala), uma garrafa, uma faca, chicote, etc.)?	□ A Maior Parte do Tempo □ As Vezes □ Nunca □ Não Sei/Não Tenho a Certeza □ Prefiro Não Dizer
Estas próximas perguntas são sobre coisas que podiam ter acontecidas CONSIGO.		
Quando estava a crescer durante os primeiros 18 anos da sua vida...		
4.1	Aconteceu que um dos pais, um guardião ou outro membro da sua família gritou, ou insultou ou humilhou-o?	□ A Maior Parte do Tempo □ As Vezes □ Nunca □ Não Sei/Não Tenho a Certeza □ Prefiro Não Dizer
4.2	Um dos pais ou um guardião ou outro membro da sua família ameaçou abandonar ou realmente abandonou-o ou expulsou-o para fora da casa?	□ A Maior Parte do Tempo □ As Vezes □ Nunca □ Não Sei/Não Tenho a Certeza □ Prefiro Não Dizer
4.3	Aconteceu que um dos pais, um guardião ou outro membro da sua família espancou, bateu, chutou, socou ou espancou-o?	□ A Maior Parte do Tempo □ As Vezes □ Nunca □ Não Sei/Não Tenho a Certeza □ Prefiro Não Dizer
4.4	Aconteceu-que um dos pais, um guardião ou outro membro da sua família bateu-lhe ou cortou-lhe com um objeto, como um pau ou (bengala), uma garrafa, um taco, uma faca, chicote, etc.?	□ A Maior Parte do Tempo □ As Vezes □ Nunca □ Não Sei/Não Tenho a Certeza □ Prefiro Não Dizer
Estas próximas perguntas são sobre coisas que posivelmente lhe aconteceram.		
Quando estava a crescer durante os primeiros 18 anos da sua vida...		
5.1	Aconteceu que alguém lhe tocou ou lhe acariciou sexualmente quando não quis?	□ Muitas Vezes □ Algumas Vezes □ Uma Vez □ Nunca □ Prefiro Não Dizer

VER A PÁGINA SEGUINTE

5.2	Alguém forçou-lhe tocar no seu corpo duma maneira sexual quando não quis?	□ Muitas Vezes □ Algumas Vezes □ Uma Vez □ Nunca □ Prefiro Não Dizer
5.3	Alguém tentou ter relação sexual oral, anal ou vaginal consigo quando não quis?	□ Muitas Vezes □ Algumas Vezes □ Uma Vez □ Nunca □ Prefiro Não Dizer
5.4	Alguém realmente teve relação sexual oral, anal, ou vaginal consigo quando não quis?	□ Muitas Vezes □ Algumas Vezes □ Uma Vez □ Nunca □ Prefiro Não Dizer
6-7	**Ambiente dos Pares e da Comunidade**	
Estas próximas perguntas são sobre SENDO INTIMIDADO quando estava a crescer. A intimidação acontece quando um jovem ou grupo de jovens dizem ou fazem coisas ruins e desagradáveis a outro jovem. Intimidação também acontece quando um jovem é muito provocado de forma desagradável ou quando um jovem é deixado de fora de propósito. Não é quando dois jovens da mesma idade, forçam ou podem discutir ou brigam ou quando a provocação é feita de uma maneira amigável e divertida.		
Quando estava a crescer durante os primeiros 18 anos da sua vida...		
6.1	Quantas vezes foi intimidado?	□ Muitas Vezes □ Algumas Vezes □ Uma Vez □ Nunca □ Prefiro Não Dizer
6.2	Quantas vezes esteve numa briga? (Não necessariamente relacionado com intimidação).	□ Muitas Vezes □ Algumas Vezes □ Uma Vez □ Nunca □ Prefiro Não Dizer
6.3	Quantas vezes sentiu-se que estava a ser tratado injustamente devido a sua raça?	□ Muitas Vezes □ Algumas Vezes □ Uma Vez □ Nunca □ Prefiro Não Dizer

VER A PÁGINA SEGUINTE

Estas próximas perguntas falam sobre quantas vezes, quando estava uma criança, VOCÊ podia ter visto ou ouviu certas coisas na sua VIZINHANÇA OU COMUNIDADE (não em sua casa ou na TV, nos filmes, ou no rádio).		
Quando estava a crescer durante os primeiros 18 anos da sua vida…		
7.1	Viu ou ouviu alguém sendo espancado na vida real?	□ Muitas Vezes □ Algumas Vezes □ Uma Vez □ Nunca □ Prefiro Não Dizer
7.2	Viu ou ouviu alguém a ser esfaqueado ou baleado na vida real ?	□ Muitas Vezes □ Algumas Vezes □ Uma Vez □ Nunca □ Prefiro Não Dizer
7.3	Viu ou ouviu alguém a ser ameaçado com um faca ou com uma arma na vida real?	□ Muitas Vezes □ Algumas Vezes □ Uma Vez □ Nunca □ Prefiro Não Dizer
7.4	Teve um amigo ou membro da família que morreu num acidente de viação?	□ Muitas Vezes □ Algumas Vezes □ Uma Vez □ Nunca □ Prefiro Não Dizer
7. 5	Viu ou ouviu alguém num acidente de viação que foi ferido?	□ Sim □ Não □ Prefiro Não Dizer
8.9	**Estilo de Vida Actual**	
Estas próximas perguntas são sobre a sua saúde física, emocional e mental, agora…		
8.1	Diria em geral, a sua saúde é…	□ Excelente □ Muito Bom □ Bom □ Razoável □ Mau □ Não Sei/Não Tenho a Certeza □ Prefiro Não Dizer
8.2	Nos últimos 12 meses, alguma vez, não foi ao médico devido ao custo financeiro?	□ Sim □ Não □ Não Sei/Não Tenho a Certeza □ Prefiro Não Dizer
8.3	Um médico, enfermeira ou outro profissional de saúde já lhe disse que tinha qualquer dos seguintes ou que tem: ataque cardíaco, doença cardíaca, pressão alta ou derrame?	□ Sim □ Não □ Não Sei/Não Tenho a Certeza □ Prefiro Não Dizer

VER A PÁGINA SEGUINTE

8.4	Um médico, enfermeira ou outro profissional de saúde já lhe disse que teve ou tem asma?	□ Sim □ Não □ Não Sei/Não Tenho a Certeza □ Prefiro Não Dizer
8.5	Um médico, enfermeira ou outro profissional de saúde já lhe disse que teve ou tem qualquer dos seguintes: depressão (tristeza crônica), ansiedade ou doença mental?	□ Sim □ Não □ Não Sei/Não Tenho a Certeza □ Prefiro Não Dizer
8.6	Um médico, enfermeira ou outro profissional de saúde já lhe disse que teve ou tem diabetes?	□ Sim □ Não □ Não Sei/Não Tenho a Certeza □ Prefiro Não Dizer
8.7	Um médico, enfermeira ou outro profissional de saúde já lhe disse que teve ou tem cancro?	□ Sim □ Não □ Não Sei/Não Tenho a Certeza □ Prefiro Não Dizer
8.8	Um médico, enfermeira ou outro profissional de saúde já lhe disse que tem estado com excesso peso de peso ou está obeso?	□ Sim □ Não □ Não Sei/Não Tenho a Certeza □ Prefiro Não Dizer
8.9	Tem dificuldades sérias de concentração, lembrar-se, ou fazer decisões, devido às condições físicas, mentais ou emocionais?	□ Sim □ Não □ Não Sei/Não Tenho a Certeza □ Prefiro Não Dizer
8.10	Quantas vezes sentiu que está a ser tratado injustamente devido a sua raça?	□ Sim □ Não □ Não Sei/Não Tenho a Certeza □ Prefiro Não Dizer
8.11	Quantas vezes sentiu que a sua raça influencia o seu bem-estar mental e/ou emocional?	□ Yes □ No □ Not Sure □ Prefer not to say
Estas próximas perguntas são sobre a sua vida, agora....		
9.1	Fumou pelo menos 100 cigarros de tabaco em toda a sua vida?	□ Sim □ Não □ Não Sei/Não Tenho a Certeza □ Prefiro Não Dizer
9.2	Durante os últimos 12 meses, parou de fumar um dia ou mais porque estava a tentar deixar de fumar?	□ Sim □ Não □ Não Sei/Não Tenho a Certeza □ Prefiro Não Dizer

9.3	Durante os últimos 30 dias, quantos dias por semana ou por mês teve pelo menos um copo de qualquer bebida alcoólica, como cerveja, vinho, uma bebida de malte ou licor?	_____ dias por semana _____ dias nos últimos 30 dias □ Não Sei/Não Tenho a Certeza □ Prefiro Não Dizer
9.4	Na sua vida como adulto/a, foi alguma vez mandado para a cadeia ou prisão?	□ Sim □ Não □ Não Sei/Não Tenho a Certeza □ Prefiro Não Dizer
9.5	Quantas vezes sentiu que não tem dinheiro suficiente para o que precisa.	□ Não Sei/Não Tenho a Certeza □ Prefiro Não Dizer
9.6	Quantas vezes sentiu –se seguro no seu bairro?	□ Sempre □ As Vezes □ Nunca □ Não Sei/Não Tenho a Certeza □ Prefiro Não Dizer
9.7	Quantas vezes usa o cinto de segurança ao conduzir ou andar de carro? Diria…?	□ Sempre □ As Vezes □ Nunca □ Não se Aplica/Não Ando de Carro □ Não Sei/Não Tenho a Certeza □ Prefiro Não Dizer
9.8	Quantas veze usa um capacete enquanto esta a andar de bicicleta? Diria…?	□ Sempre □ As Vezes □ Nunca Não se Aplica/Não Ando de Mota □ Não Sei/Não Tenho a Certeza □ Prefiro Não Dizer

Obrigado/a pela sua participação nesta pesquisa. A sua participação será mantida de forma confidencial.
Thank you for your participation in this survey. Your participation will be kept confidential.

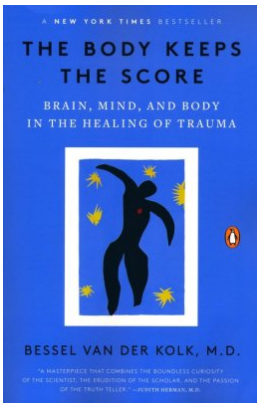
FIM

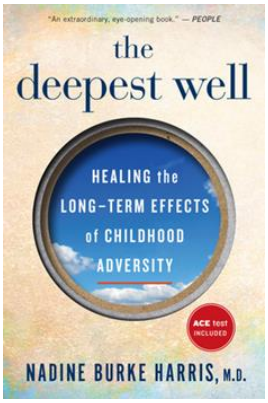
Appendix E: Additional Resources

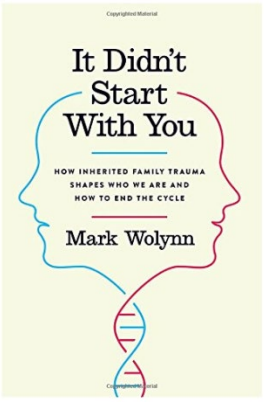
Local

- Family Centre at **tfc.bm** and Bermuda Health Council at **bhec.bm**
- Directory of Helping Services at **helpingservices.bm**
- Bermuda Health Data at **gov.bm/health-information**
- Principal Investigators at **acesbermuda@gmail.com**
- Pastors, Teachers, Mentors, Psychologists, Doctors, Professionals, and School Counsellors can all be great resources. One opportunity is to bring this report or the ACEs survey to support starting the conversation.

Books







Children's Books for ACEs:
https://bit.ly/31sFOMZ

Healing ACEs Book List:
https://bit.ly/3imiaZx

Movies

https://kpjrfilms.co/resilience/

https://kpjrfilms.co/paper-tigers/

Analytics and Research Study Support

- Aron A, Coups EJ, and Aron EN. (2013). *Statistics for Psychology*, 6th ed., Free textbook available at **https://bit.ly/3kiYVlg**.
- SA McLeod for Simply Psychology. (2019). *What a p-value tells you about statistical significance*. Free lessons available at **https://www.simplypsychology.org/p-value.html**
- Bermuda Hospitals Board Research Ethics Committee at **https://bit.ly/2DspWC4**
- WHO Fact Sheets (including RTAs) at **https://www.who.int/news-room/fact-sheets**
- Hyperlink shortening at **bitly.com**

DEDICATED TO THE HEALTH OF ALL CHILDREN

TARA HINES, MSPH & STEPHANIE GUTHMAN, PHD

PRINCIPAL INVESTIGATORS