

**A. Title Page**

1. **Project Title:** TBI (Traumatic Brain Injury) State Partnership Grant
2. **Project Director/Principal Investigator:** Megan Tierney-Ward
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3. **Grantee Name and Address:** Agency of Human Services (AHS), Department of Disabilities, Aging & Independent Living (DAIL), 280 State Drive, HCSD South, Waterbury, VT 05671-2070 | [Megan.Tierney-Ward@vermont.gov](mailto:Megan.Tierney-Ward@vermont.gov)
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  - **Telephone #:** (802) 241-0303 for Sheri and 241-0299 for Sara
6. **ACL Grant Award #:** 90TBSG0031-01-00
7. **Total Project Period:** 6/1/2018 – 5/31/2021
8. **Reporting Period:** 12/2/2018 – 5/31/2019
9. **Date of Report:** 6/28/2019
10. **ACL Program Officer:** Dana Fink
11. **ACL Grants Management Specialist:** Tanielle Chandler



## E. Activities and Accomplishments

1. What did you accomplish during this reporting period and how did these accomplishments help you reach your stated project goal(s) and objective(s)? Please note any significant project partners and their role in project activities.

Year 1 Goal: Project Planning and Development – “Vermont’s objective is to build a sustainable and robust, person-centered system of care that is accessible and user friendly for individuals with Traumatic Brain Injury (TBI), their families and caregivers. To do this, the State must coordinate initiatives that combine both federal grant funds and State programs and system improvements via strong partnerships with key stakeholders,” (Vermont Application Narrative, Goals and Objectives, page 4).

4). There are four key accomplishments for the year-one Project Planning and Development Goal

1. The TBI Advisory Board met twice to review structure, roles and bylaws. The Dept. of Disabilities, Aging and Independent Living (DAIL) and the Brain Injury Association of Vermont (BIAVT) recruited new members and confirmed existing board membership. The TBI Advisory Board Membership concluded that the name of the board shall be the Brain Injury (BI) Advisory Board moving forward, so the name is inclusive of acquired brain injuries. The BI Advisory Board is charged with advising DAIL on the state plan (see Appendix A – Board Members and Committees).
2. A new subcommittee of the BI Advisory Board, the State Plan Work Group, met twice to review the 2018 Needs Assessment Survey results (see Appendix B) and identified three focus areas for the draft Vermont State Brain Injury

Plan (see Appendix C). The Needs Assessment Survey included responses from survivors of BI, family and friends of survivors, and providers. This subcommittee includes some BI Advisory Board members, too. The State Plan Work Group is tasked with drafting the State plan to address gaps, unmet needs and builds on strengths of the system and services. The Vermont BI Advisory Board (VTBIAB) were provided an update on the work group activities and progress towards drafting the plan, during their May 20<sup>th</sup> meeting. The two groups, State Plan Work Group and VTBIAB, work together to advise on the development of the state plan, so that the draft plan takes into account all Vermonter's who may have experienced an acquired or traumatic brain injury, data, and the experience and views of key partners of DAIL, survivors, and family and friends.

3. The partnership between BIAVT, DAIL | Adult Services Division (ASD), Vermont Dept. of Corrections (DOC) and the mentor states (Pennsylvania, Colorado and Indiana) for the Criminal and Juvenile Justice Work Group has evolved during this reporting period. We met every month to learn together about what the mentor state programs have done to screen, educate health services and correctional staff and refer incarcerated individuals with TBI to services. We are still exploring how it may work in the Vermont system. The Vermont system is unique in that it does not separate individuals who are jailed or in prison. The Vermont system already screens 7,000 detained and sentenced individuals each year using the HELPS screening tool.

4. Vermont Dept. of Health (VDH) and DAIL developed a work plan and strategies to enhance surveillance by having more stakeholders report on TBI. VDH agreed to consult on things like how to evaluate the Vermont State Brain Injury Plan. Tanya Wells, Injury Prevention Chief at VDH is a member of both the BI Advisory Board and the State Plan Work Group.

### **Accomplishments to Each Objectives**

Objective 1: Enhance current TBI Surveillance – DAIL and VDH have an informal agreement and written work plan to guide the process towards data collection and better understanding of the outcomes for Vermonters with TBI and their families. One area, we are considering for an enhancement is to include questions about brain injury on the 2020 Adult Behavioral Risk Factor Surveillance System (BRFSS). The 2017 Youth Risk Behavior Survey (YRBS) [Report](#) ask high school and middle school age students about helmet use and concussions. These questions were repeated in 2018 so there will be two years of data. Use of a self-report of health behaviors and conditions is a proven method to monitor population health and identify strategies to address health disparities. An Injury Prevention Analyst at VDH was recently hired to replace Mallory Staskus, Public Health Analyst. Mallory will be the new BRFSS Coordinator and supervise the Injury Prevention Analyst.

DAIL and the TBI Coordinating Technical Center discussed the state community snapshot process and format. DAIL provided the Vermont Traumatic Brain Injury Brief (see Appendix D) and the 2018 Needs Assessment Survey results to use to draft

the community snapshot for Vermont. This snapshot will be completed by the next reporting period.

Objective 2: Improve Care Transitions – The Brain Injury Association of Vermont (BIAVT) are helping to develop training tools for discharge planners at hospitals and acute rehab centers. The BIAVT reported that initial research of tools was completed. The BIAVT reviewed materials from: 1) the Agency for Healthcare Research and Quality; 2) Ohio State University | Wexler Medical Center; 3) State of Alabama; 4) Family Caregiver Alliance: National Center on Caregiving | Hospital Discharge Planning Guide for Families and Caregivers; 5) Centers for Medicare & Medicaid Services | CMS; and 6) Next Step in Care | a program of the United Hospital Fund).

The BIAVT staff also worked with a UVM Medical Center team on a discharge instruction sheet for individuals with concussion and staff education materials. A poster was developed for all Primary Care Providers (PCP) and outpatient offices that illustrated the referral pathway.

Marketing and outreach are other strategies to improve care coordination that the BIAVT is supporting as part of the grant agreement with DAIL. The BIAVT reached providers, individuals with TBI and their caregivers, and the general public through their social media sites that include [Instagram](#), [YouTube](#) and [Facebook](#). The goal of the social media campaign was to increase awareness and engagement in support of brain injury and promote the Walk & Roll for Brain Injury fundraiser on May 18th, 2019. The walk this year took place in Montpelier (the state capital) and teams walked from the public high school to the Statehouse for group and team photos.

Other examples of BIAVT outreach and marketing strategies to support care coordination included:

- Re-development of general information brochure, the concussion brochure, support group fliers and handouts, and Veterans specific TBI brochure
- Promotion of Defense and Veterans Brain Injury Center information for families, patients and providers for distribution and education
- Compilation of ski patrol contacts for all ski resorts and distributed of concussion information to all ski resorts within Vermont
- Development of brain injury awareness press release and compilation of list and distribution to 30 news outlets of brain injury awareness press release
- Compilation of contact information and distribution list of doctors and clinics for overview brochures
- Compilation of contact information and distribution of the concussion information and resources to all recreational activities within Vermont including gymnastics, climbing, mountain biking, martial arts, dance, skate, town recreation, community centers, stables, alpine skiing, cross country skiing, outdoor centers and
- Development of 10-page newsletter.

Objective 3: Plan for the TBI screening in the Correctional System – The Department of Corrections (DOC) and DAIL signed and executed an interdepartmental Memorandum of Understanding (MOU), on June 5, right after the

reporting period ended May 31. The MOU establishes the roles and responsibilities between Departments to implement a screening protocol for TBI upon entry into the correctional system and in creating a system that fosters individualized treatment and recognition of challenges related to TBI. The MOU also outlines the contribution of match funds, DOC will document for this grant project.

DOC, DAIL and the BIAVT met regularly while the MOU was being reviewed. We also participated in two conference calls with the mentor states for the Criminal and Juvenile Justice (CJJJ) Work Group. The mentor states - Pennsylvania (PA), Colorado (CO) and Indiana (IN) answered Vermont's questions about their programs to screen for TBI in their juvenile and adult correction facilities. After comparing these programs with Vermont's current TBI screening program, we decided to continue to use the HELPS tool instead of switching to the Ohio State University Traumatic Brain Injury Identification Method (OSU TBI-ID) tool that mentors and other partner states are using<sup>i</sup>. The Vermont DOC health consultant staff conduct the multi-day health, mental health and substance use screening and assessment process. Approximately 6000 – 7000 individuals that come through the Vermont DOC system are screened by the health staff who are trained in HELPS. DOC also has had an Electronic Health Record (EHR) for years now – before the TBI grant from ACL was awarded. Within the last year, the EHR added the TBI screening and very recently set up reports to draw data.

These partnerships demonstrate reciprocal learning among partner states. DAIL and BIAVT have a better understanding of the DOC system. Vermont learned about the mentor states (PA, CO and IN) efforts and Vermont shared information about the

[Vermont State Statute 28 V.S.A. § 907](#). This state law defines when a Vermont inmate is designated as having a “Serious Functional Impairment” (SFI). The statute requires that correctional facilities screen inmates for SFI designation and provide adequate support for the individual. Since traumatic brain injury may be a contributing factor for the SFI designation, follow up after a positive HELPS screen includes: an alert in the Electronic Health Record, which will result in a referral to the appropriate medical professional for further assessment. The assessment can include obtaining external medical records. Additionally, a positive screen will result in the diagnosis of Rule Out (R/O) TBI, to be in the medical record Problem List.

Objective 4: Create person-centered individualized interventions and education for individuals with TBI in Corrections – Please refer to Objective 3. In general, the Vermont team that includes DOC, DAIL, BIAVT, and the mentor states have met regularly with a focus on screening tools first. In the next project year, we will explore the following strategies to support person-centered individualized interventions and education of persons with a TBI:

- Build TBI training into existing training such as the one-day mental health training at the Correctional Academy
- Develop a peer support and self-advocacy curriculum for inmates and those on probation
- Build upon the existing relationship with the University of Vermont to do a secondary screening for individuals who are positive for TBI on the initial screening and
- Develop community resources for:



- Individuals that are detained, but not sentenced and screen positive for TBI and
- Individuals in jail, designated with a Serious Functional Impairment because of a TBI. This aligns with the draft state plan to focus on resource development, which enhances or creates resources accessible in communities this population may transition to between being detained, jailed, and released on probation.

Objective 5: TBI Advisory Board Revitalization – The BIAVT and DAIL have filled vacant board member positions. The current list is in Appendix A. The Vermont BI Advisory Board (VTBIAB) met January 28 and May 20.

The VTBIAB has just started to make revisions and updates to the bylaws. One of the most significant changes to the bylaws is to ensure a broader scope of the board's work to include acquired brain injury as defined by the Brain Injury Association of America adopted by BIAVT. The definition of Traumatic Brain Injury will also be updated to align with the Brain Injury Association of America's definition. The bylaws will reflect the following definition that is inclusive of TBI:

- An acquired brain injury (ABI) is an injury to the brain that is not hereditary, congenital, degenerative, or induced by birth trauma. Essentially, this type of brain injury is one that has occurred after birth. The injury results in a change to the brain's neuronal activity, which affects the physical integrity, metabolic activity, or functional ability of nerve cells in the brain.
- There are two types of acquired brain injury: traumatic and non-traumatic.

- A traumatic brain injury (TBI) is defined as an alteration in brain function, or other evidence of brain pathology, caused by an external force.  
Traumatic impact injuries can be defined as closed (or non-penetrating) or open (penetrating).
- A non-traumatic brain injury is an alteration in brain function or pathology caused by an internal force (Brain Injury Association of Vermont, <https://www.biausa.org/brain-injury/about-brain-injury/basics/overview>).

Members are reengaged as evident by high attendance at the VTBIAB meetings and communication between meetings. We also conducted a survey after the first meeting to get feedback on the meeting process. The first meeting had an overall good rating. New and existing board members were asked on the survey about their interests (e.g., continuity of care, education, etc.). These interests are future subcommittees that may be convened to work on development, implementation and monitoring of components of the state plan to work on specific projects.

Objective 6: BI Annual State Plan – The Vermont BI Advisory Board (VTBIAB) met January 28 and May 20. The State Plan Work Group is a subcommittee of the Board that met outside of these dates on February 26 and April 18 to review the 2018 Needs Assessment Survey results. The State Plan Work Group members identified three priority areas after a thorough review of data that is currently available. Vermont’s strategic planning process has completed the assessment and continued to build capacity through partnerships with key stakeholders. Planning began and will continue in year two, while implementation and evaluation will roll out in year three of this project. The State Plan Work Group and VTBIAB purposes overlap and

complement each other. The overlap is that both committees advise the state in developing a plan and some members are on both committees. The complementary aspect is that the State Plan Work Group is a “hands on” committee that dives into the data, reviews other state plans, will draft goals, etc., while the VTBIAB receives updates and key information from the work group to better advise DAIL on the state plan.

Two significant accomplishments towards the draft of the state plan were: 1) expansion of the scope to include acquired and traumatic brain injury and 2) identification of three priority areas for the state plan. The priority areas are early identification and education, resource development and services. Please refer to Appendix B and C for details about the 2018 Needs Assessment Results and the current draft of the Vermont State Brain Injury Plan.

Transitions and Employment Work Group: Vermont was a regular participant in the conference calls and provided input on the deliverables.

The Transition and Employment Work Group, mentor and partner state representatives, met online each month during the reporting period. The group included representatives from Indiana, Nebraska, North Carolina, Vermont and a non-grantee participant from Iowa. Work Group members brainstormed a list of core competencies (specialized knowledge, skills and abilities) thought to be essential for Vocational Rehabilitation Counselors (VRCs) to effectively support people with brain injury in their employment endeavors. The Work Group’s product for Year 1 is the document titled Proposed VRC Core Competencies for Serving Individuals with Brain Injury, submitted by Nebraska VR on behalf of the Work Group. Plans for Year

2 include a review and request for feedback from subject matter experts, and additional edits as needed. An associated set of draft survey questions is in development and will be used to poll VRCs in selected states on the legitimacy of the proposed core competencies in Year 2.

Criminal and Juvenile Justice Work Group: Vermont participated in the regular calls with this group and had two separate calls with the mentor states for technical assistance related to Vermont's efforts to screen for TBI in the Vermont Dept. of Corrections system.

The Criminal and Juvenile Justice Work Group, comprised of representation from mentor Colorado, Indiana, & Pennsylvania and partner states Arkansas and Vermont as well as other interested states (Alabama, Arizona, Iowa, Nebraska, and Washington, Oregon), met monthly to discuss and collaborate on products and provide mentorship for the partner states. Each month, the mentor states rotate the responsibility of facilitating the meeting and taking notes.

This Work Group decided to pursue both a short-term product and a long-term product. By the end of the second year of this grant, this Work Group intends to produce a guide on TBI protocol implementation in criminal and juvenile justice settings that will cover best practice guidelines for screening for lifetime history and impairment, conducting assessments, providing accommodations, education and training, data collection/evaluation, and developing community partnerships. During this first year the Work Group created an outline to organize the development of this guide.

The Work Group also determined that building cost-effectiveness analysis into TBI protocol implementation in the criminal and juvenile justice settings would be valuable for all states. To that end, the group hopes to produce a guide for implementing appropriate measures and methods of data collection into TBI programs as well as performing data analysis to determine cost-effectiveness by the end of the grant period. This guide will help states with the essential and difficult task of program evaluation. The group has met with a researcher from Ball State University to discuss this project, drafted a project proposal, and is in the process of exploring potential funding sources.

Additionally, mentor states have held several meetings individually with each partner state to discuss their technical assistance needs and provide mentorship. These meetings have resulted in resource sharing including educational presentations and trainings, questionnaires, screening tools, curriculum, check lists, consent forms, and various other materials the mentor states have developed for their programs. Technical assistance has involved providing both written answers to specific questions in between meetings as well as general discussion concerning the many aspect of program development, implementation, and expansion.

The Criminal and Juvenile Justice group has developed an outline for the guide on TBI protocol implementation in criminal and juvenile justice settings, which will be submitted by Pennsylvania on behalf of the entire Work Group.

Using Data to Connect People to Resources Work Group: Vermont participated in this Work Group. The Using Data to Connect People to Services Work Group mentor and partner state representatives met online each month during the reporting

period. Mentor grantee states Virginia and Nebraska facilitated the meetings. The group included partner state representatives from Alaska, California, Georgia, Idaho, Kansas, Minnesota, Missouri, Rhode Island, Utah, and Vermont, and non-grantee participants from Iowa and North Carolina. Work Group members found that by sharing details about each state's TBI data sources and practices, we enriched our own knowledge and understanding and created a foundation for a national TBI data model. The Work Group's products for Year 1 are; "Our Common Language", a glossary of brain injury data sources and commonly used terminology, a "Data Matrix" of Work Group member state data sources, and a PowerPoint slide presentation titled "TBI Registries: Two Models", describing the TBI registry models in Virginia and Georgia. All three products are submitted by Virginia on behalf of the Work Group. Work Group plans for Year 2 include an update to the "Our Common Language" document with state-specific data sources.

2. What, if any, challenges did you face during this reporting period and what actions did you take to address these challenges? Please note in your response changes, if any, to your project goal(s), objective(s), or activities that were made as a result of challenges faced.

The work plan goal to enhance surveillance, faced one challenge. The Vermont Dept. of Health (VDH) tried to find a person (e.g., staff, intern, fellow) to update the hospitalization and emergency department TBI data brief from 2010 – 2014 (see Appendix D). In past years, VDH had successfully found a Centers for Disease Control and Prevention (CDC) fellow to be assigned to the Injury Prevention Program. The request this year, did not match a fellow to VDH. In addition, the

Injury Prevention Analyst position was vacant for most of the reporting period. However, Mallory Staskus who formerly held this position was available to answer questions about data collection and analysis. DAIL, VDH, and BIAVT will meet in year two, to identify a consultant, intern, or employee with time and skills to update the data brief and other surveillance needs.

Another challenge was with the key tasks in year one for the care coordination goal. The challenge was to figure out how to engage discharge planners to weigh in on the tools that help survivors of TBI and their family's transition out of hospitals to their homes. We wanted to engage this group so they can provide input on the toolkits Barb Winters, BIAVT - Certified Brain Injury Specialist Trainer (CBIST) identified as potentially adaptable for Vermont. In addition, Barb who was the lead at BIAVT, working on this project with DAIL, recently resigned from the BIAVT. The good news is this will not change the direction of this part of the Vermont work plan. DAIL and BIAVT will work together to keep this project moving forward by gathering feedback from discharge planners at hospitals across Vermont while BIAVT recruits an employee to take this project over.

The greatest challenge with the progress towards the goals of TBI screening and individualized interventions in the Dept. of Corrections (DOC) system was establishment of clear roles and responsibilities in a written agreement between DAIL and DOC. There was more back and forth to make sure all partners understood what was being asked of the department. The good news is the Memorandum of Understanding has been signed and executed between DAIL and DOC. We addressed the challenge and feel we are on track and no work plan change is needed.

In fact, the partnership between the Departments, BIAVT and the mentor states for Criminal Justice and Juvenile Justice Work Group continued to inform the protocol for TBI screening, education of staff and referrals to service, without a formal agreement in place.

Finally, the goal to develop a State BI Plan (e.g., annual or strategic plan) has made significant progress. But the challenge is Vermont and our partners need more time to complete the plan. In part because it has been several years since the last plan. It was contingent on reengage existing stakeholders and recruitment of new stakeholders. It will take more time than originally expected to finalize the plan. We have goals, objectives, and strategies to add to the three priority areas (early identification and education, resource development and services). For this reporting period, the working draft plan (Appendix C) was included that provides the background information about the process Vermont is using, principles (that were agreed upon by the group) that guide the work, and the description of the three focus areas that were identified. We will continue to attach revisions of the Vermont State Brain Injury Plan with the semi-annual narrative to show the progress made. There are no changes to report to ACL that prevent Vermont from successfully developing, implementing, and evaluating the state plan within the three-year timeframe of this project.

3. How have the activities conducted during this project period helped you to achieve the measurable outcomes identified in your project proposal?

One example of how Vermont's activities have helped make forward progress to achieve the measurable outcomes in the work plan is under the goal to enhance TBI



surveillance. The outcome that was expected is “VT will increase the number of stakeholders who report TBI population level data to the VT Department of Health”. In order to achieve this DAIL, VDH, and other stakeholders identified potential data collection intersects. In year two, we will work with each stakeholder to determine how to accomplish it and implement it in year three. These potential data collection systems are:

- Vermont Legal Aid | Disability Law Project
- Vermont Dept. Health – Adult Behavioral Risk Factor Surveillance System, the Youth Risk Surveillance Survey and an update to the Traumatic Brain Injury (TBI): Data Brief Vermont Vital Records and Hospital Discharge (2010-2014)
- SIREN and CRASH – data collected from Emergency Medical Services
- Agency of Education – School Concussion Survey
- University of Vermont and Dartmouth Hitchcock Medical Center - Trauma Registry
- Brain Injury Association of Vermont – Needs Assessment Survey
- Vermont DAIL | TBI Program – Service Providers and National Core Indicators (e.g., tracks and measures performance of services for adults with developmental disabilities)
- Dept. of Corrections – Electronic Health Record and
- Vermont Veterans Hospital.

Another example of how activities are working towards measurable outcomes falls under care coordination: “VT will develop a toolkit (online resource) for hospitals

and rehabilitation centers to use as a guide to support individuals with TBI during the transition back to the community-match with services and supports to meet current care needs”. In this example, the research by the BIAVT identified potential toolkits to adapt for Vermont. Because BIAVT submits quarterly reports to DAIL on progress with these types of activities, BIAVT and DAIL came up with strategies to engage discharge planners in the process so the tool is valued and used.

In both examples, the coordination and monitoring of activities lead to the desired outcomes. For example DAIL’s review of reports and regular meetings with partners are part of the success to date. As a result our partnerships have strengthened. Teams are engaged in creative solutions to challenges along the way.

4. What was produced during the reporting period and how have these products been disseminated? Products may include articles, issue briefs, fact sheets, newsletters, survey instruments, sponsored conferences and workshops, websites, audiovisuals, and other informational resources.

There were several products developed and disseminated during this reporting period. The list below are examples of what was created and how it was communicated or disseminated to various groups.

- List of active members of the Vermont TBI Advisory Board and State Plan Work Group – distributed at the May 20 meeting and will be forwarded to the Commissioner of DAIL, Monica Hutt for approval
- Schedule of quarterly Vermont BI Advisory Board meeting set through December 2020 – communicated by Outlook Calendar invitations, e-mail, and written minutes of the May 20 VTBIAB meeting

- Increase visibility with social media presence (e.g., BIAVT Instagram posts reached 4,628 people, 65% of those people were NOT following @BIAVermont) – appendix to grant report submitted by BIAVT to DAIL on deliverables and progress towards achieving deliverables
- Press Release issued during March Brain Injury Awareness month – disseminated through DAIL’s public relations unit to media outlets
- Memorandum of Understanding agreement in place between DAIL and DOC – distributed internally to program, business, legal, and Commissioner offices
- Confirmed TBI screening tool for DOC population will be HELPS – disseminated written minutes from meetings with DOC, BIAVT, DAIL and Criminal and Juvenile Justice Work Group mentor states
- PowerPoint presentations with audio recording of the 2018 Needs Assessment Results – presented at the State Plan Work Group meeting February 26 and disseminated audio to those members of the Work Group not able to attend
- Identification of three priority areas and principles for the draft Vermont State Brain Injury Plan – disseminated as a handout for the May 20 VTTBIB meeting.

There were also products developed by the three mentor Work Groups that met through videoconference calls. The products have been distributed electronically to all states in the groups and ACL will get a copy in the mentor state narrative report. Refer to the details in question 1. In summary, the Data Work Group developed a glossary or common language, a data matrix of what states are using to survey TBI, and two presentations about state TBI registries and referral strategies. The

Transition and Employment Work Group has an outline of competencies for the Vocational Rehabilitation Counselors that support individuals with TBI to access their services (e.g., job training and placement). The Criminal and Juvenile Justice Work Group developed an outline for the TBI screening protocol for incarcerated populations.

**F. Appendix (All Performance Reports):** Include a copy of each project product as a separate attachment and identify each by a capital letter in sequence.

**A. Advisory Board Members List and Committees**

**B. 2018 Needs Assessment Results – PowerPoint Presentation PDF**

**C. Vermont State Brain Injury Plan - DRAFT**

**D. [Traumatic Brain Injury Brief](#) – Data Brief Vermont Vital Statistics and Hospital Discharge Data**

**Endnotes:**

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<sup>i</sup> HELPS stands for H = Hit in the head; E = Emergency room treatment; L = Loss of consciousness; P = Problems with concentration and memory; S = Sickness or other physical problems following **injury**.



## Appendix A Vermont Traumatic Brain Injury Board Members (VTBIB)

#	Name	Representation
1	Trevor Squirrell	Brain Injury Assoc. of VT
	Jess Leal	Brain Injury Assoc. of VT, Ex- Officio
	Barb Winters	Brain Injury Assoc. of VT, Ex-Officio <sup>1</sup>
2	Camille George	DAIL
	Megan Tierney-Ward	DAIL
	Monica Hutt	DAIL
	Andre Courcelle	DAIL, Ex-Officio
	Sara Lane	DAIL, Ex-Officio
3	Sharon Norton	Dept. for Children and Families
4	Annie Ramniceanu	Dept. Of Corrections
	Heidi Fox	Dept. of Corrections
	Jacqueline Rose	Dept. of Corrections
5	Tanya Wells	Dept. of Health
6	Frank Reed	Dept. of Mental Health
7	Charles Becker	Vermont Legal Aid – Disabilities Law Project
8	Eric Paige	Provider – Green Mountain Support Services
9	Matthew Gammons, MD	Provider – Rutland Regional Medical Center
10	Bryan Dague	Provider – University of Vermont
11	Emily Harvey	Public
12	Alisha Guillford	Public
13	Becky Hale	Public
14	Bill Morgan	Public
15	Bobby Surott-Kimberly	Public/ Veterans Hospital Vermont
16	Calla Papademas	Public
17	Cheryl Van-Epps	Public
18	Deborah Black	Public
19	Isaura Izquierdo	Public
20	Jane Hulstrunk	Public
21	Kevin Burke	Public
22	Lorraine Wargo	Public
23	Marsha Bancroft	Public/Disabilities Rights Vermont
24	Natalie Kelly	Public
25	Pam McCarthy	Vermont Family Network
26	Robert Burke	Veterans Affairs

<sup>1</sup> May serve as designee for an organization.



#	Name	Representation
27	Sue Zamencnik	Vocational Rehabilitation

### State Plan Work Group

#	Name	Organization
1	Jess Leal	Brain Injury Association of Vermont
2	Andre Courcelle	DAIL
	Sara Lane	DAIL
	Sheri Lynn	DAIL
3	Jacq Rose	Dept. of Corrections & VTTBIB
4	Tanya Wells	Dept. of Health & VTTBIB
5	Frank Read	Dept. of Mental Health & VTTBIB
6	Eric Paige	Green Mountain Support Services & VTTBIB
7	Diana Lamson	Public
8	Charles Becker	Vermont Legal Aid
9	Sue Zamecnik	Vocational Rehabilitation
10	Alicia Guilford	VTTBIB
11	Bobbie Surott Kimberly	VTTBIB
12	Calla Papademas	VTTBIB
13	Cheryl Van Epps	VTTBIB
14	Isaura Izquierdo	VTTBIB



## Concussion Task Force

#	Name	Organization
1	vacant	BIAVT
2	Abby Beerman	UVMMC - Injury Prevention - Safe Kids VT
3	Jon Gilmore	Maple Leaf Clinic
4	Amy Ridlon	Wells & Middletown Springs - School Nurse
5	Deborah Hirtz	Professor of Neurological Sciences & Pediatrics/UVMMC, MD
6	Sue Zamecnik	DAIL – Vocational Rehabilitation
7	Matt Gammons	MD at VT Orthopedic Clinic/ Rutland Regional Medical Center
8	Sara Lane	VT Dept. of Disabilities, Aging and Independent Living
9	Reese Boucher	Castleton - AT Program Dir.
10	Rebecca Louko	Physical and Occupational Therapy - UVMMV - Out-Patient Therapy
11	Karen Harlow	Essex Junction HS - School nurse
12	Kit Vreeland	UVM Dept. of Rehab. & Movement Science
13	vacant	AOE
14	Danielle Kent	Speech Language Pathology
15	Aimee Pascale	Assistant Professor - ATC - Lyndon St College
16	Tanya Wells	VT Dept. of Health
17	Trevor Squirrell	BIAVT
18	Sharonlee Trefry	VT Dept. of Health - State School Nurse Consultant
19	Isaura Izquierdo	Public
20	Alicia Guilford	Public
21	Cheryl Van Epps	Public





Appendix B

## 2018 Traumatic Brain Injury (TBI) Needs Assessment

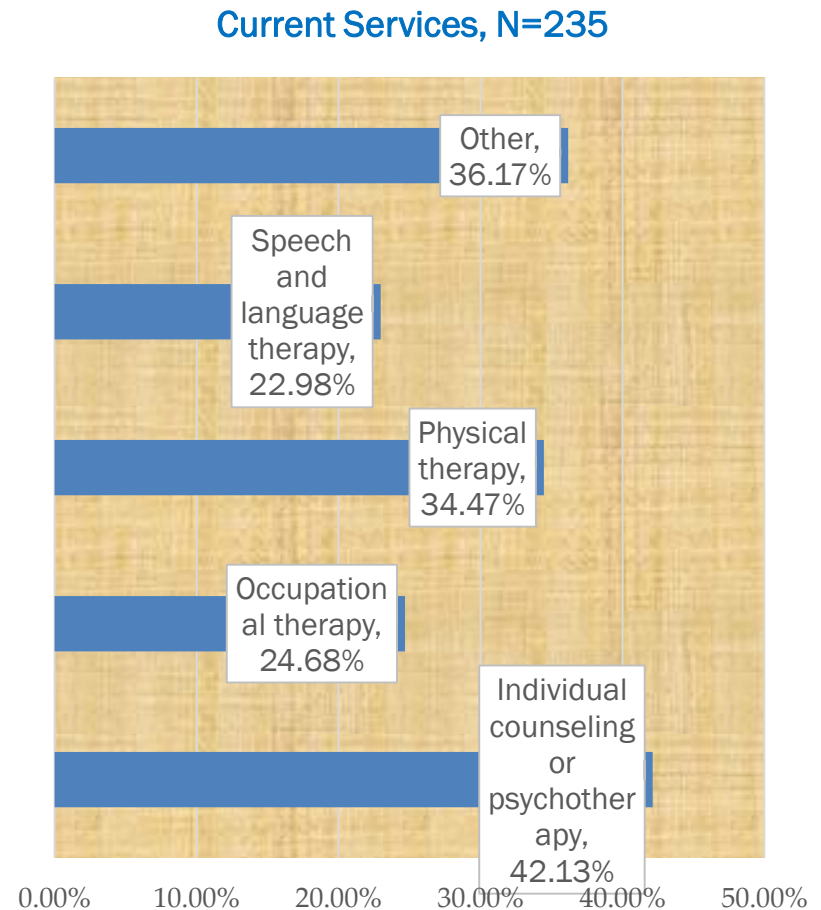


# About the Needs Assessment

- Brain Injury Association of Vermont (BIAVT) conducted a web survey in 2018 to:
  - Inform state planning process by identifying gaps and strengths
- Three groups were asked what they think:
  - Individuals with TBI
  - Family and friends of family or friend with a TBI
  - Providers
- Limitations
  - Questions vary across the three groups
  - Views represent a part of the population with a TBI

# Survey Results By:

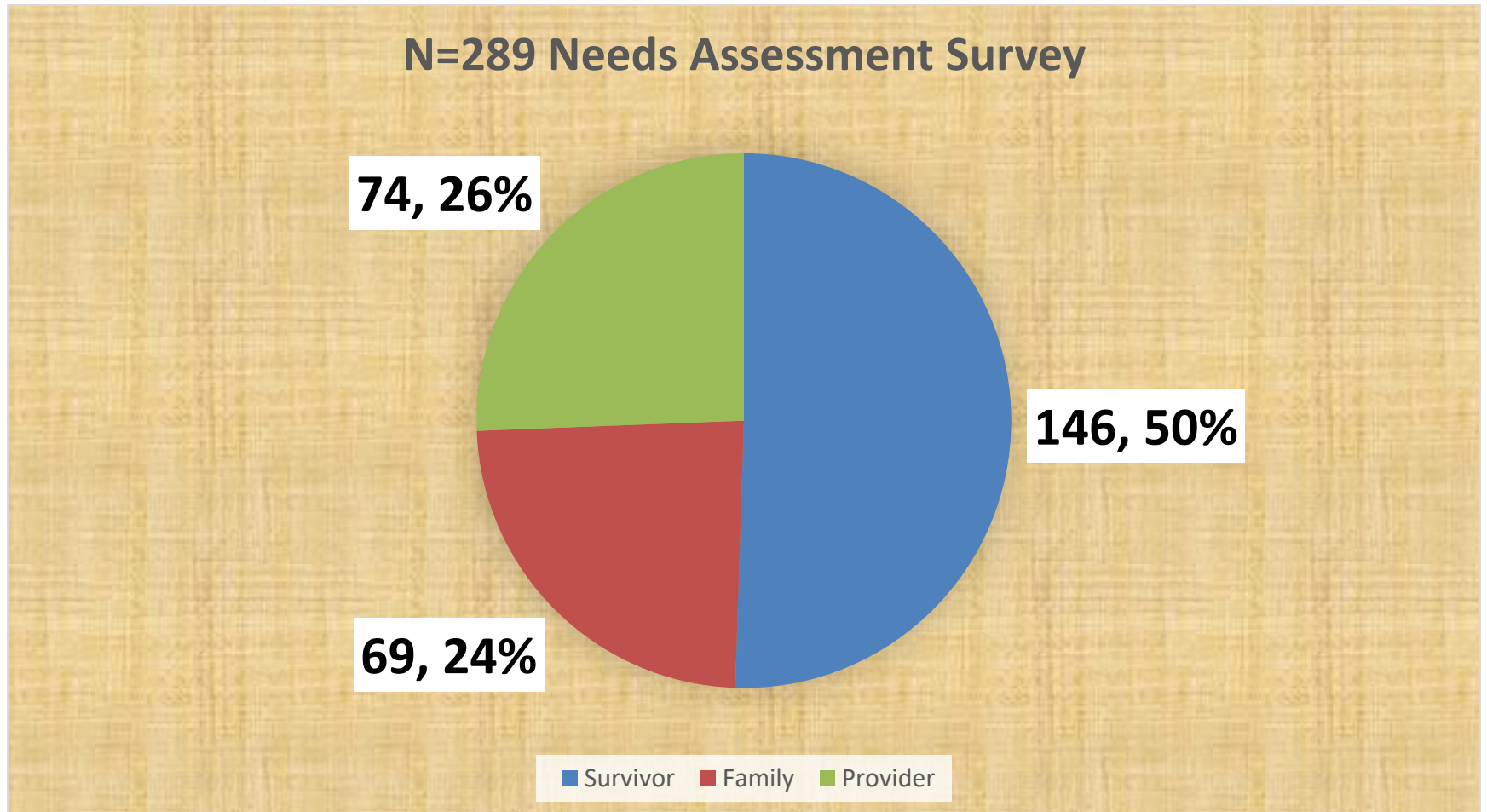
- Personal information
- About your TBI and current services
- Life experience since TBI
  - Education
  - Work
  - School
- TBI System and services
  - Where do you get information
  - Importance and satisfaction of services
- Recommendations
- Providers



# Personal Information

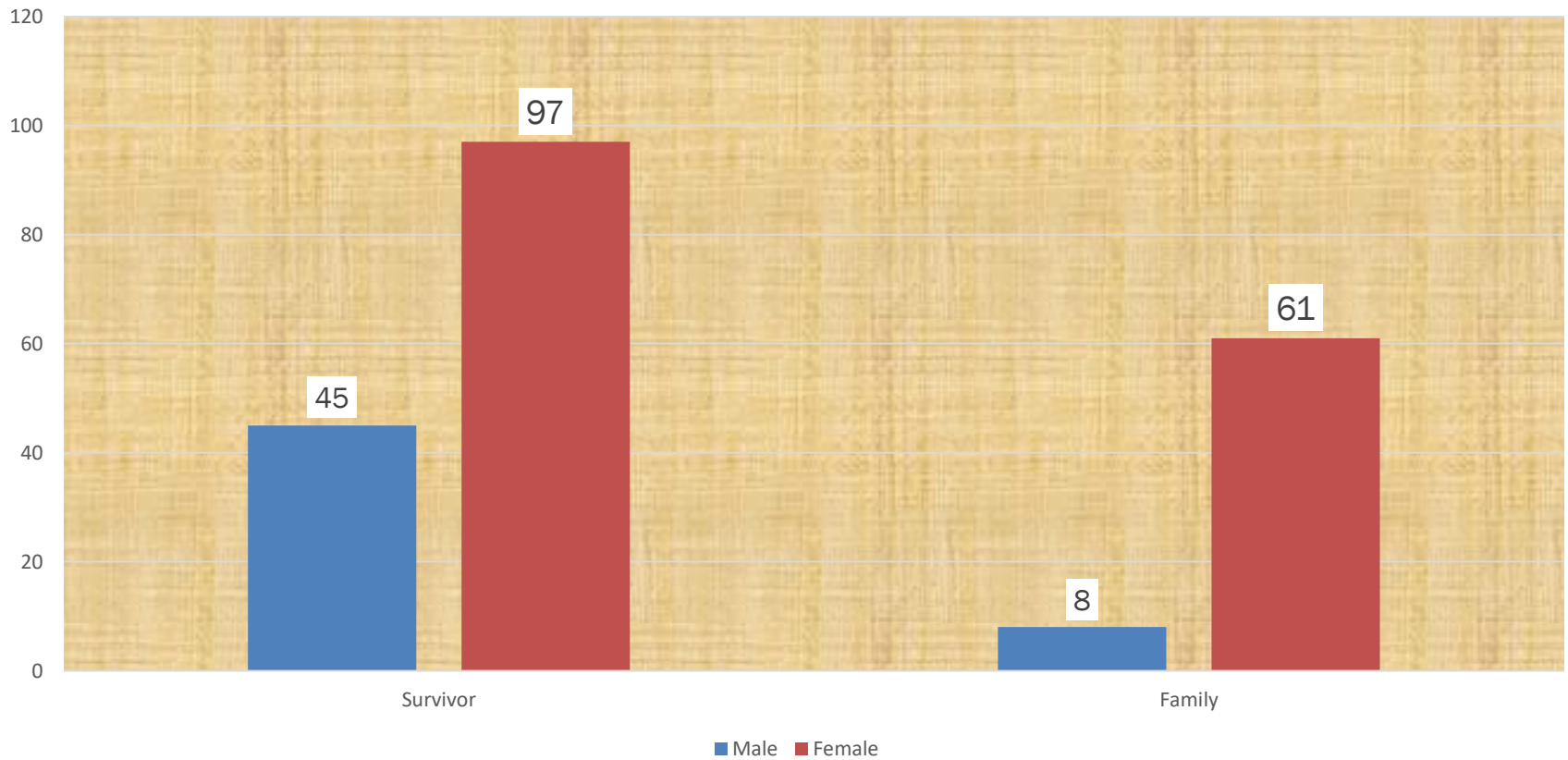


# In 2018 | Sample Size



# Gender

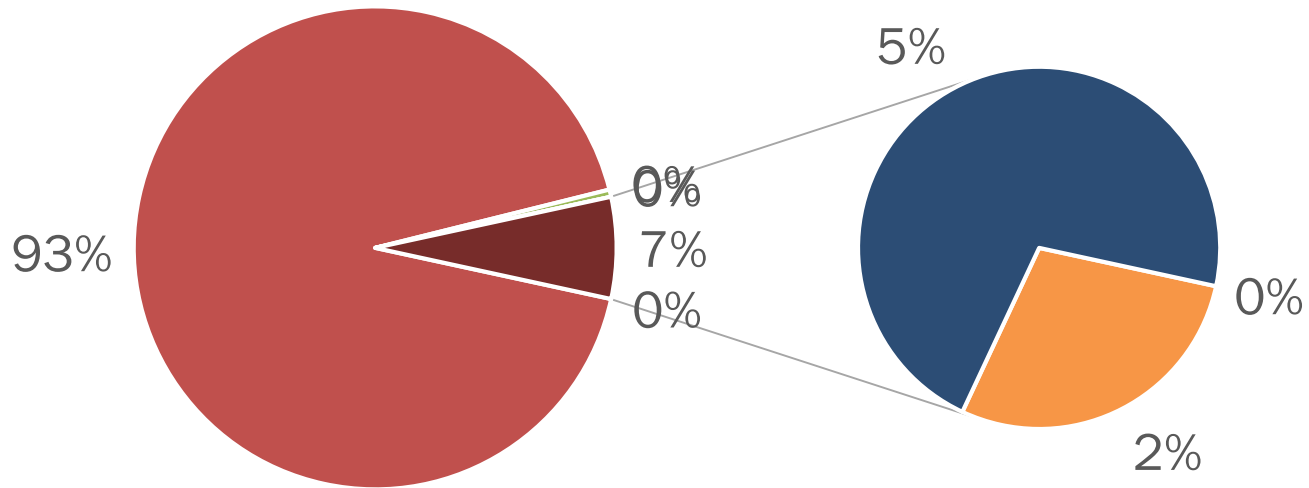
N= 215



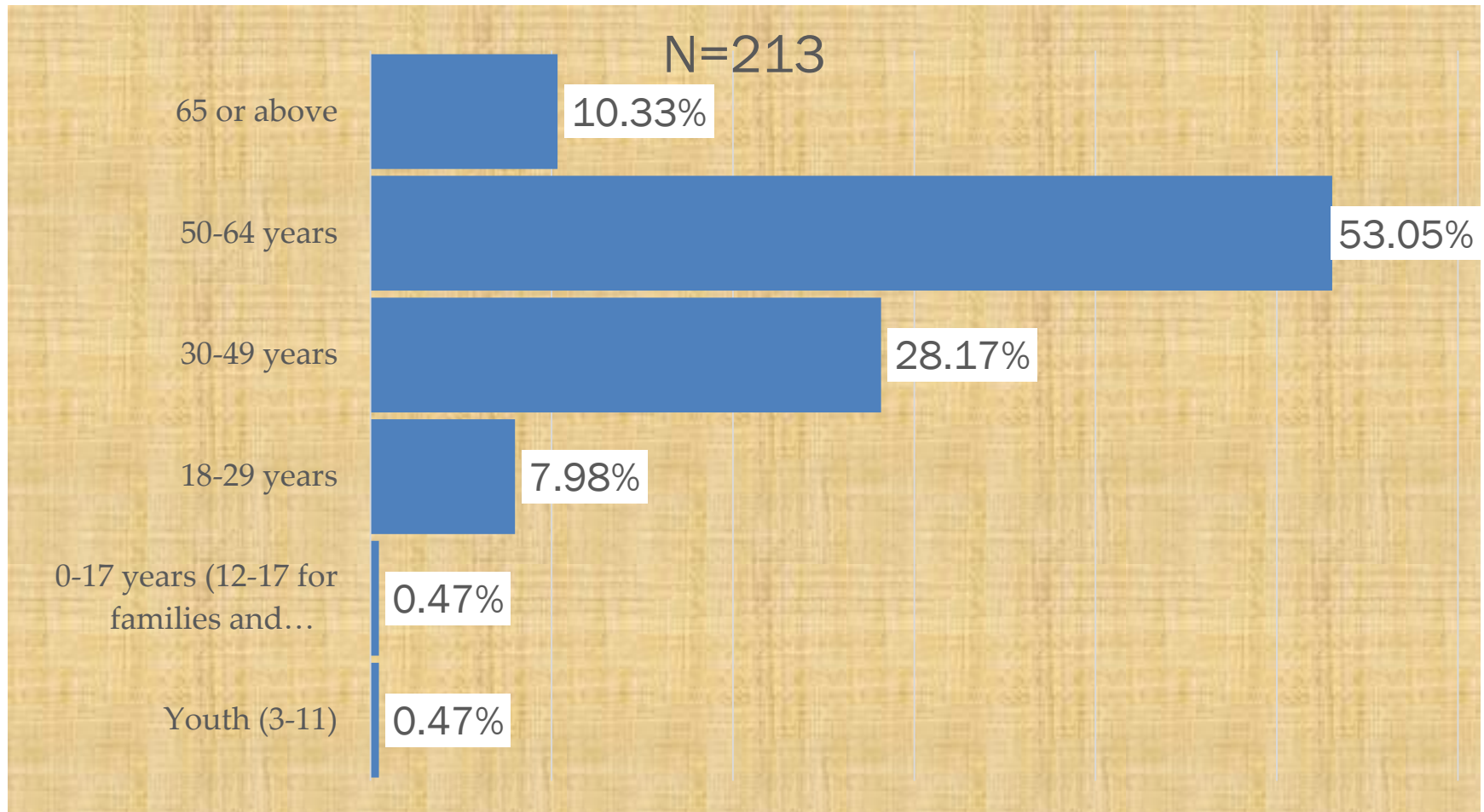
# Race/Ethnicity

%, N= 206

- Black/African American
- Caucasian
- Native American and First Nation
- Asian
- Native Hawaiian or other Pacific Islander
- Two or more races



# Age of survivor, or your family member/significant other/friend with a TBI

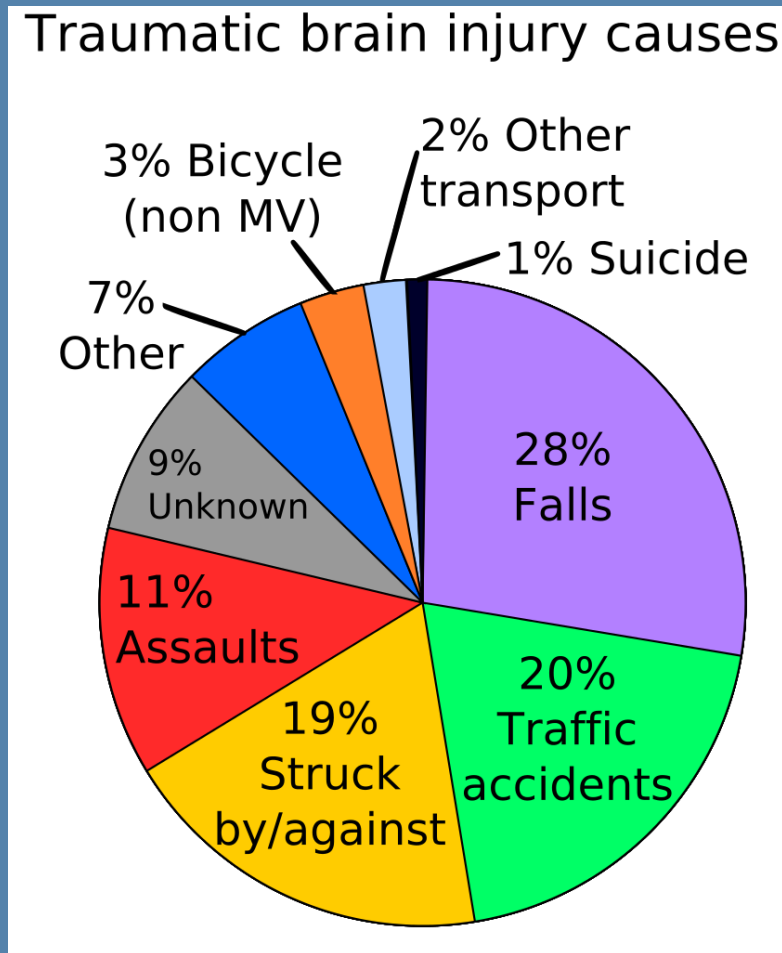




# Summary of Personal Information

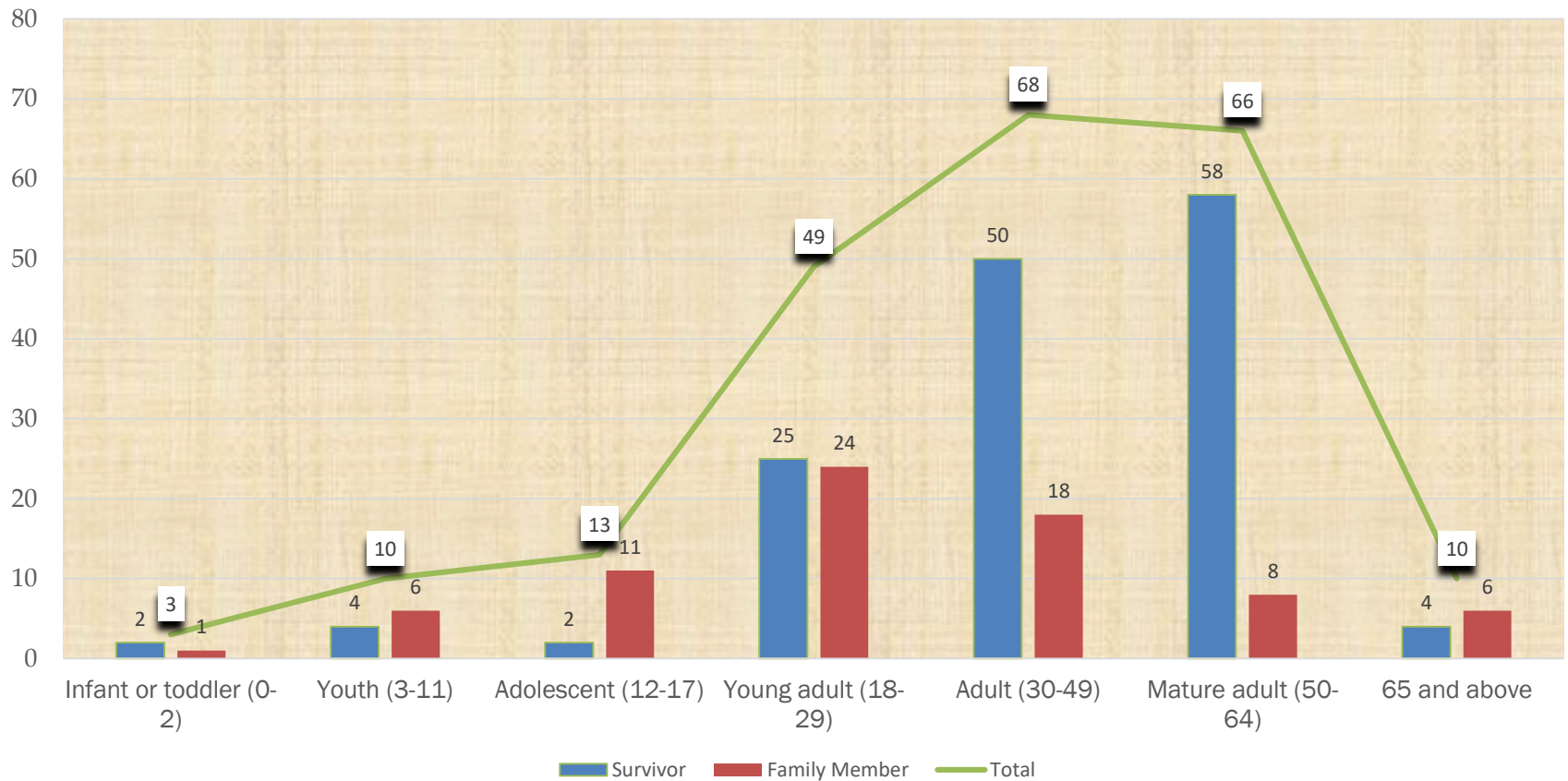
- The sample had more female than male respondents.
- The age range with the greatest representation was 50 – 64 years old.
- Half of the respondents were individuals that had a traumatic brain injury.
- 7 % diversity
  - Vermont's population of people of color is growing and equals 7 % (2016 Population Estimates).

# About Your TBI and Current Services



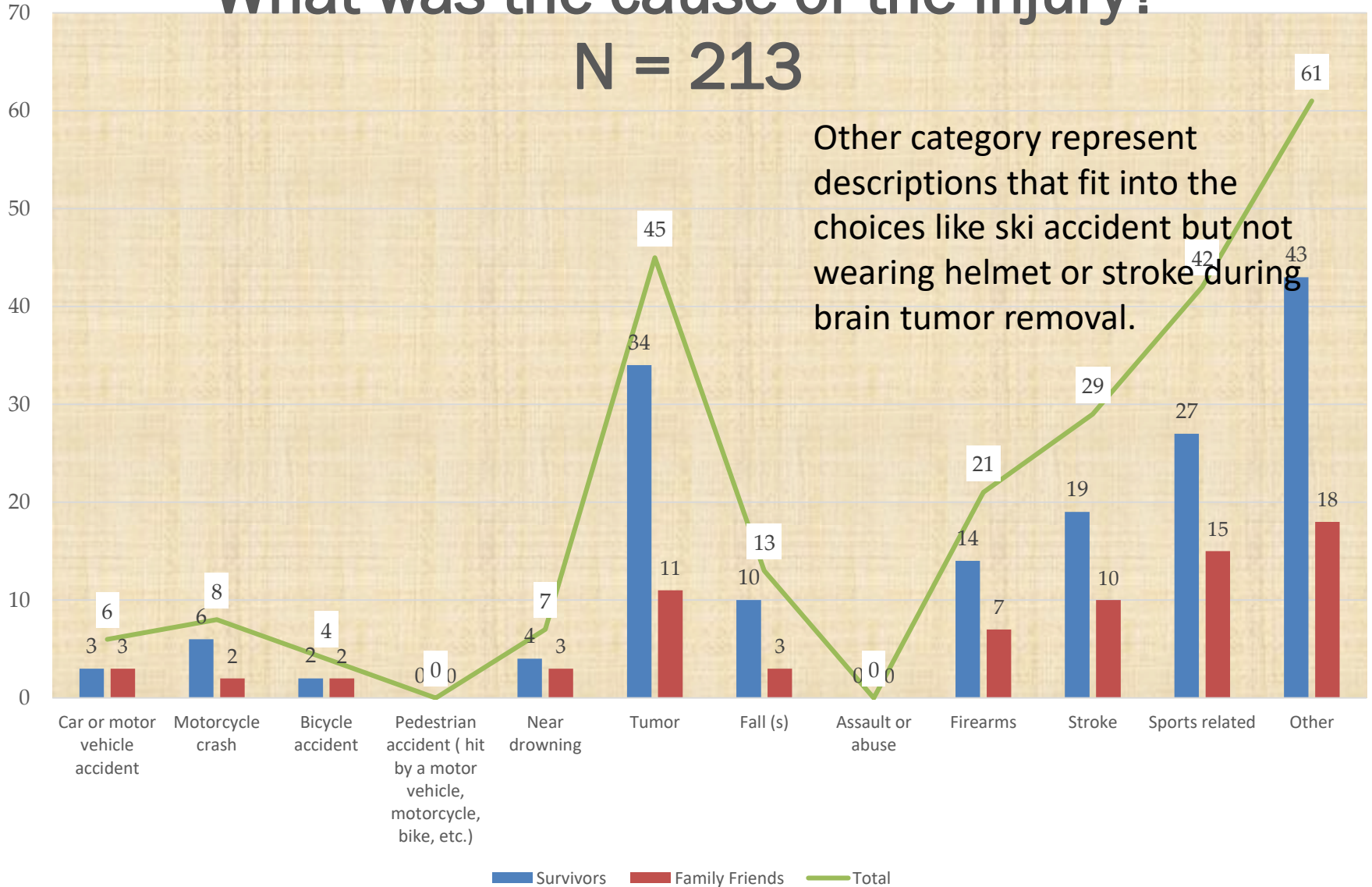
# How old were you when you sustained your TBI?

N = 214



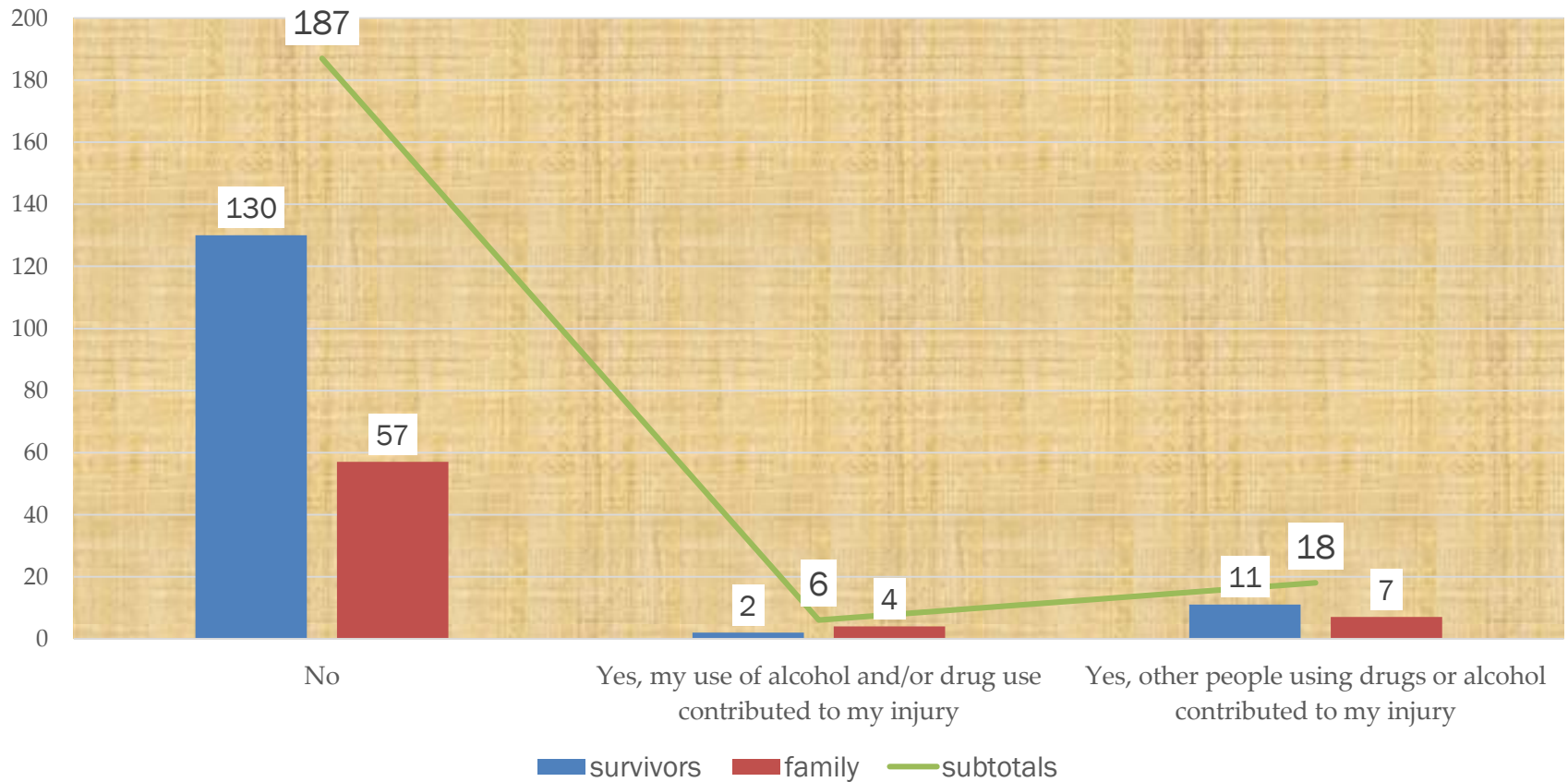
# What was the cause of the injury?

N = 213



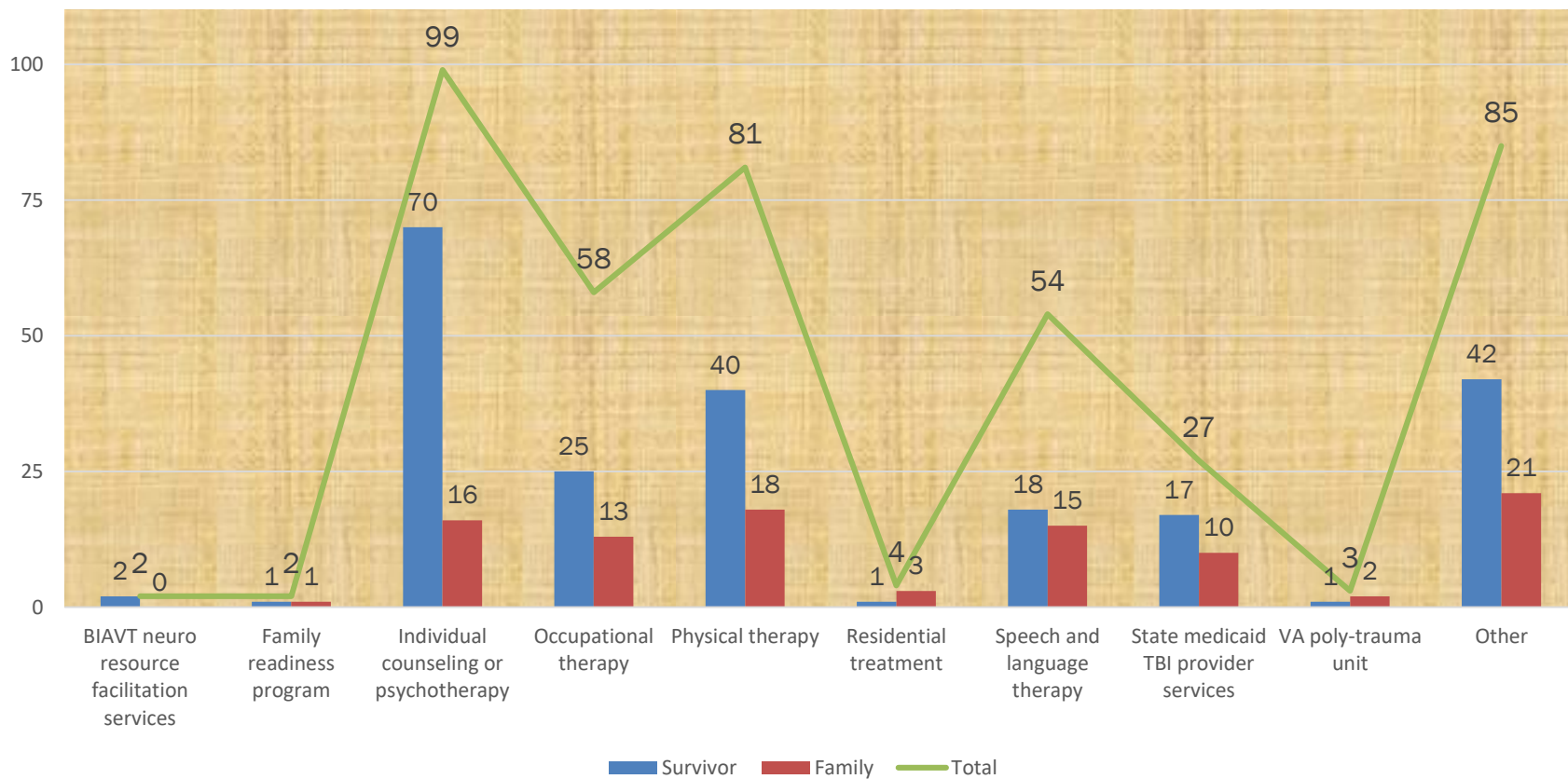
# Were drugs involved in your injury?

N= 211



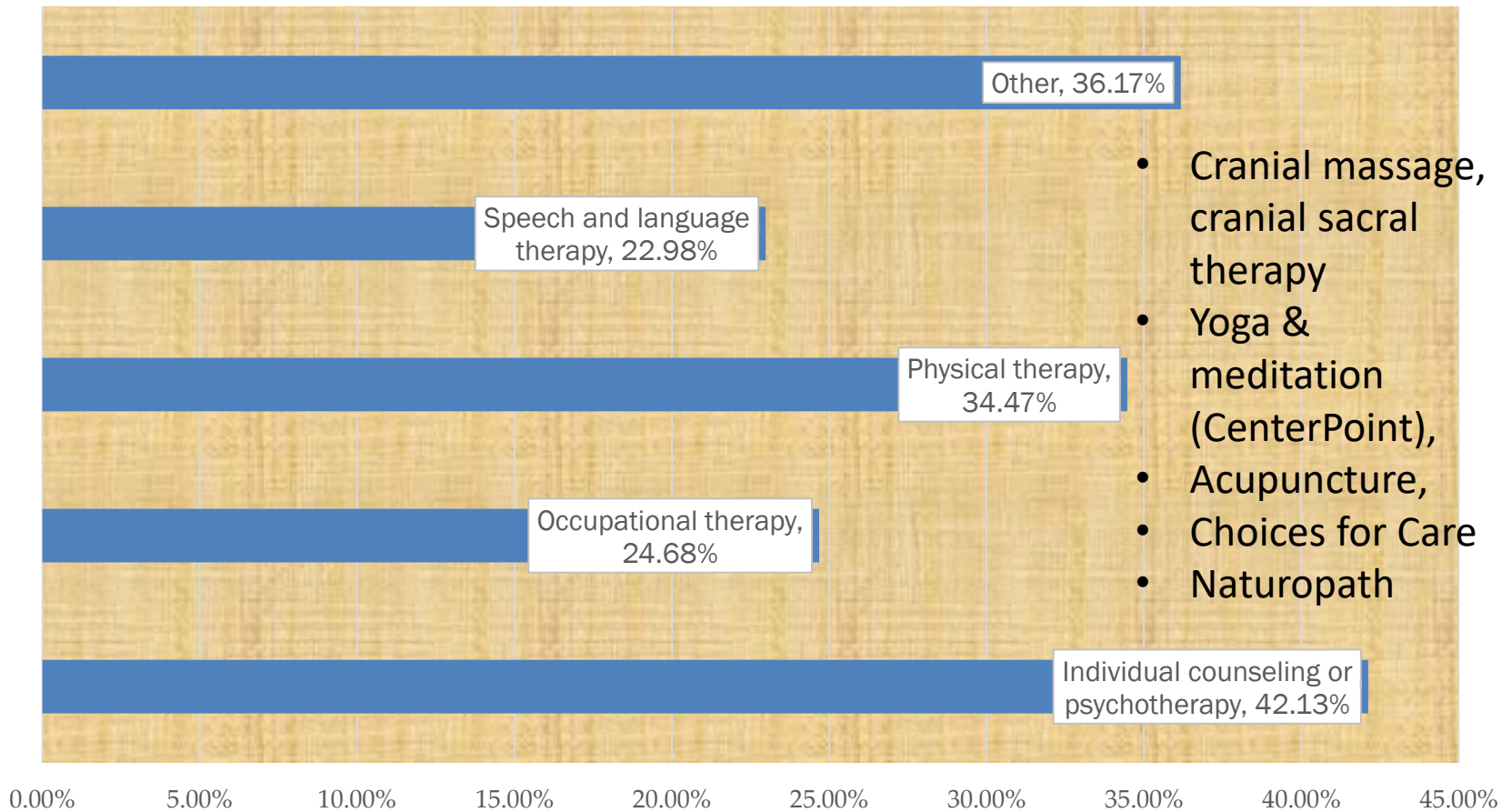
# What services are you currently receiving to help with your TBI?

N = 114 Survivors, N = 51 Family or Friends



# The 5 Most Common Services Receiving Currently

N=235



# Summary of TBI Experience

- Adults 30 – 49 years, age group with the greatest number TBI at that age.
  - Among survivors, age 50 – 64 represented the greatest number of TBI at that age.
- Tumors were the most common cause of the injury.
- Most reported drugs were no involved in the injury.
- Individual counseling, physical therapy, and occupational therapy were the most common services currently received among those surveyed.



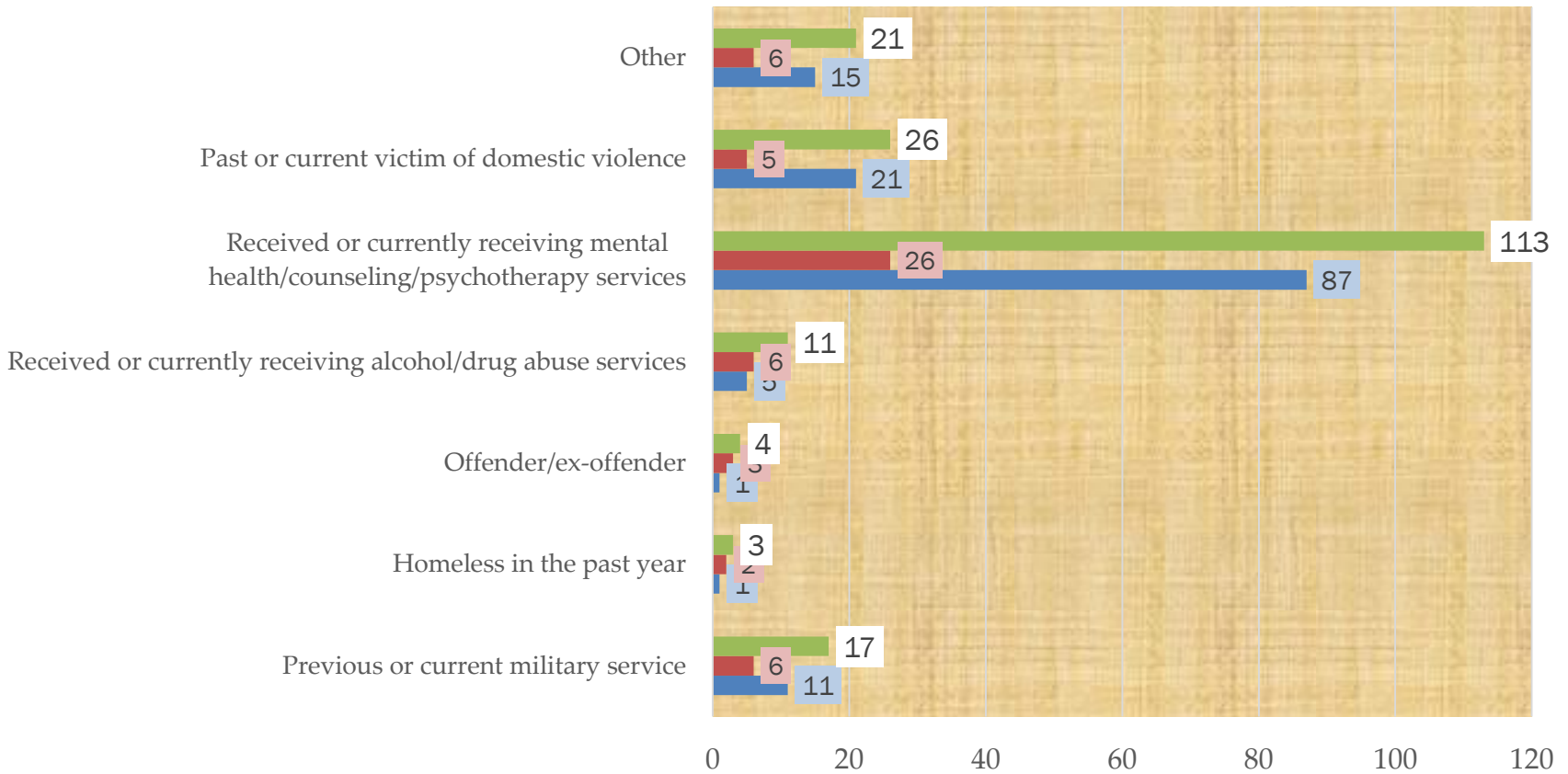
# Your life experiences since your TBI



- Work
- School
- Military
- Housing
- Domestic Violence

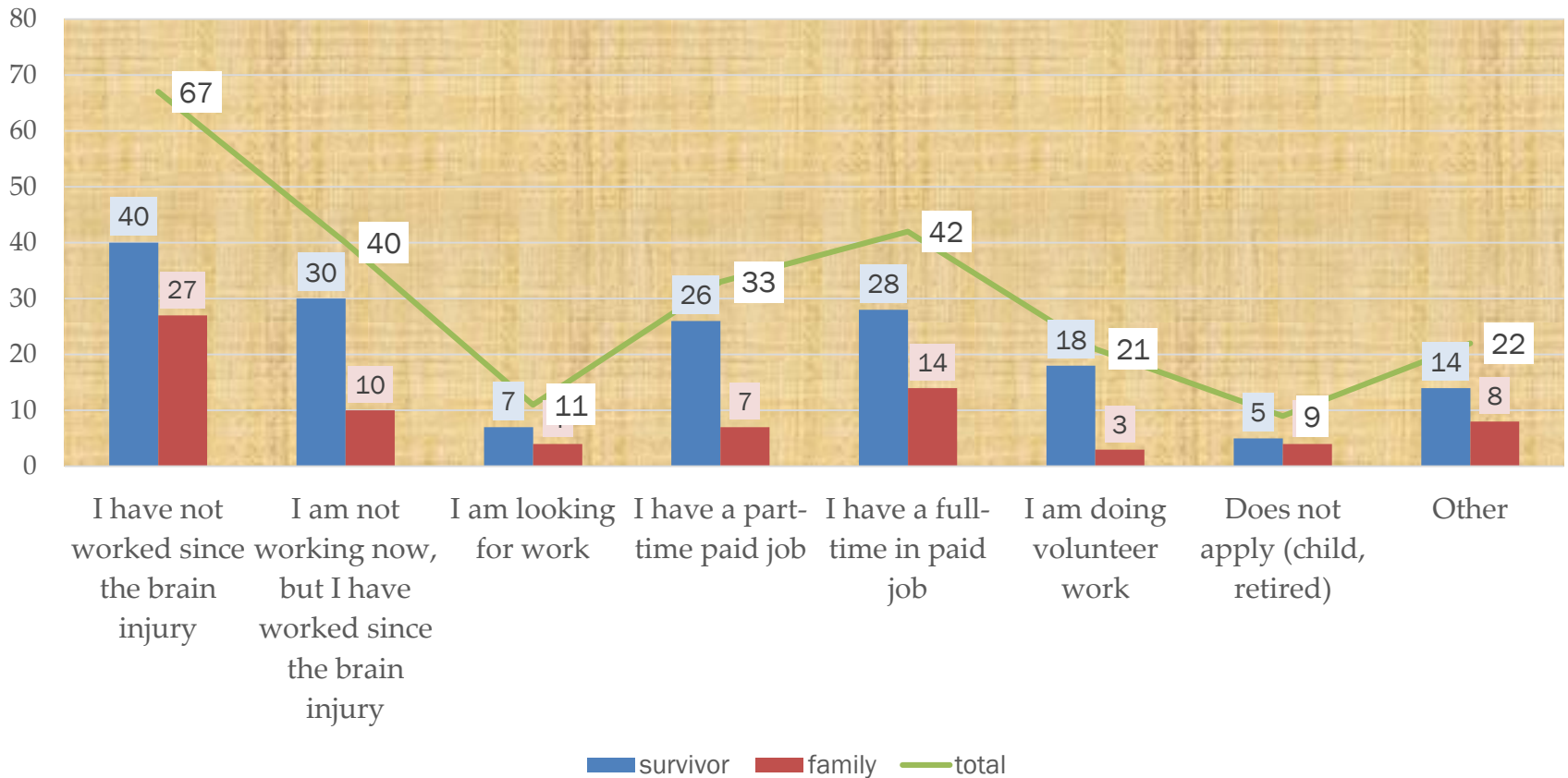
# Please check all categories that apply to you.

N= 106 Survivors, N= 68 Family or Friend



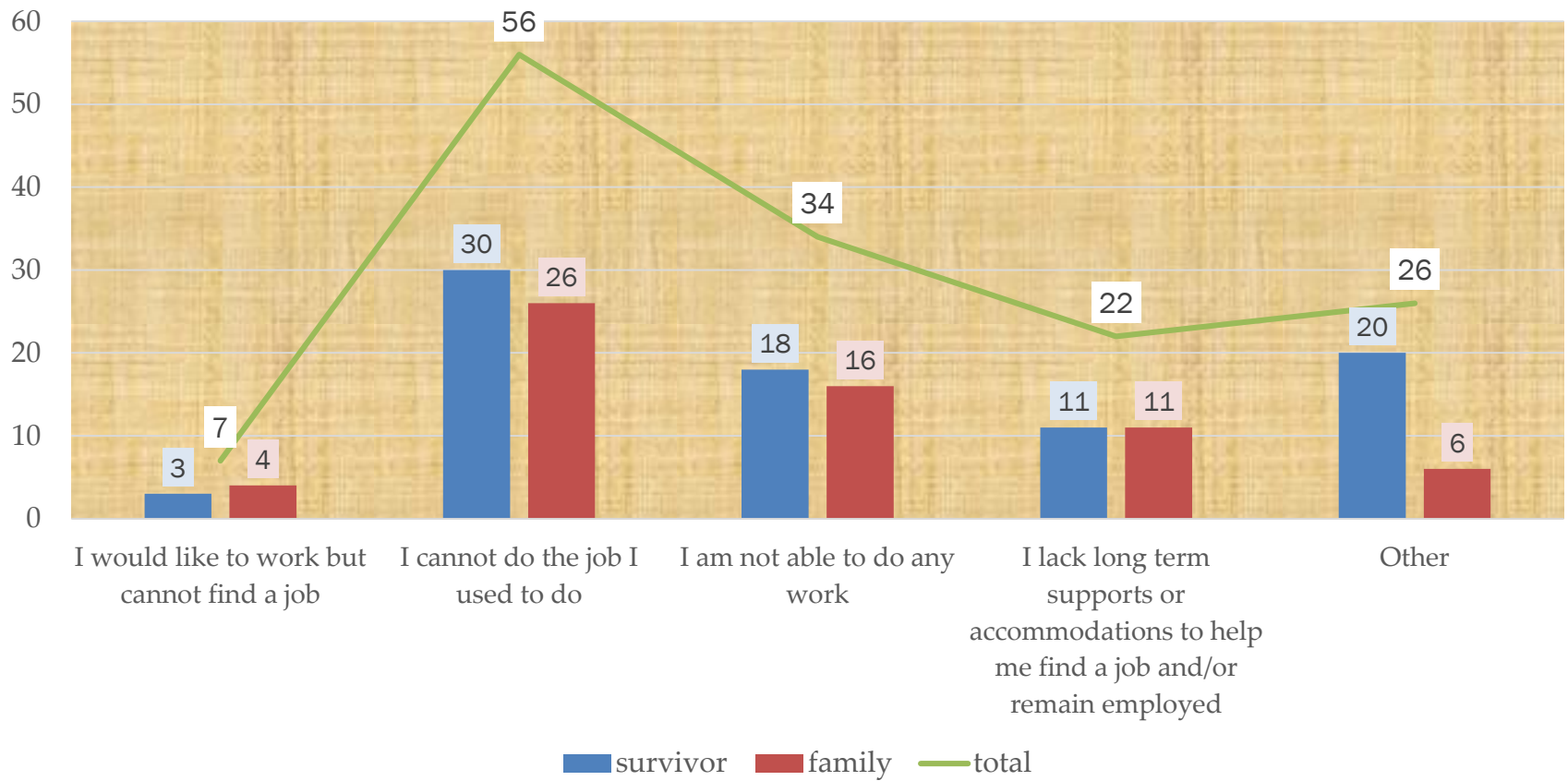
# What is your current work situation?

N= 144 Survivors, N = 68 Family/Friends



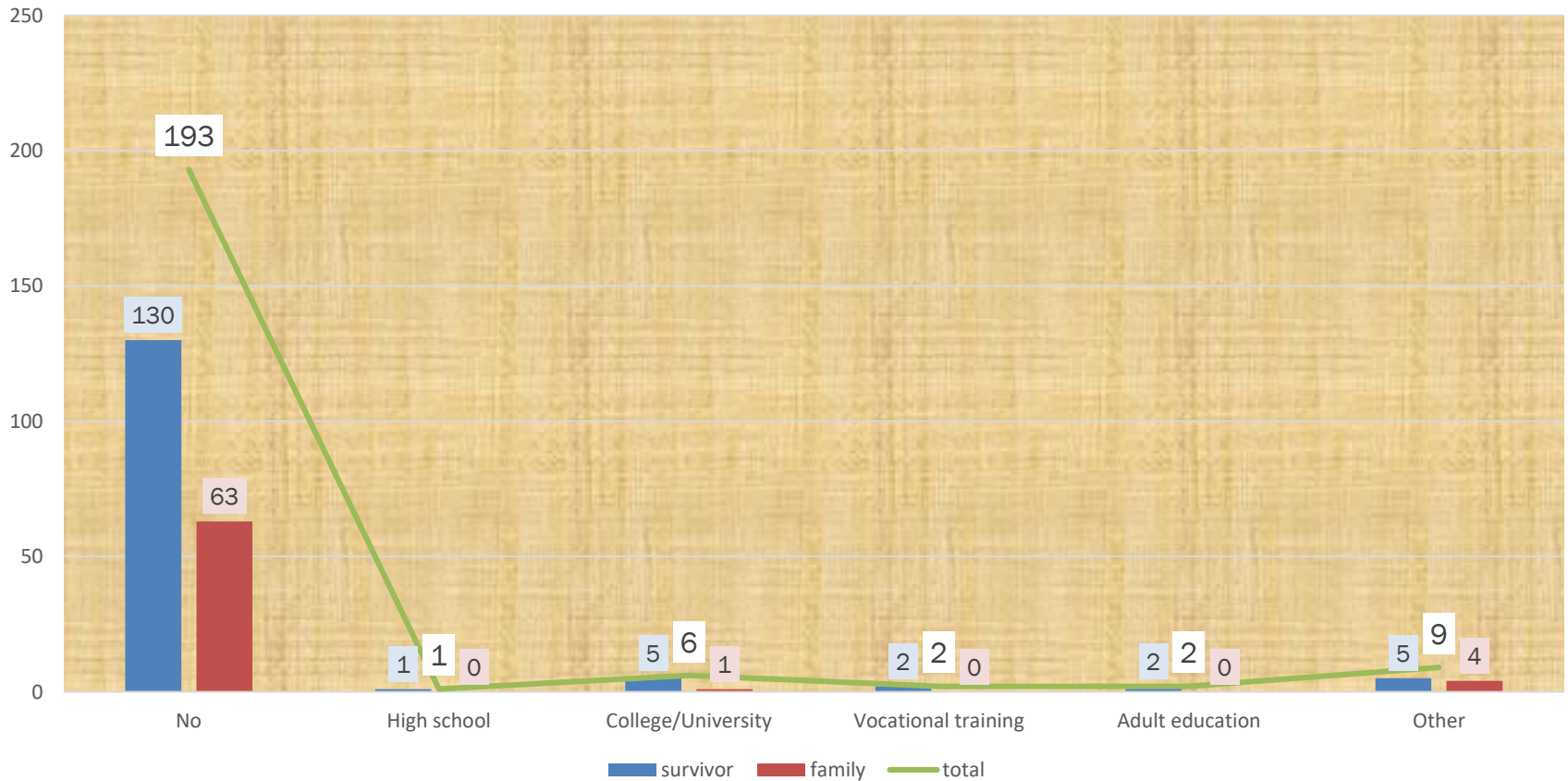
# If you are not working right now, why not?

N = 82 Survivors, N = 46 Family/Friends



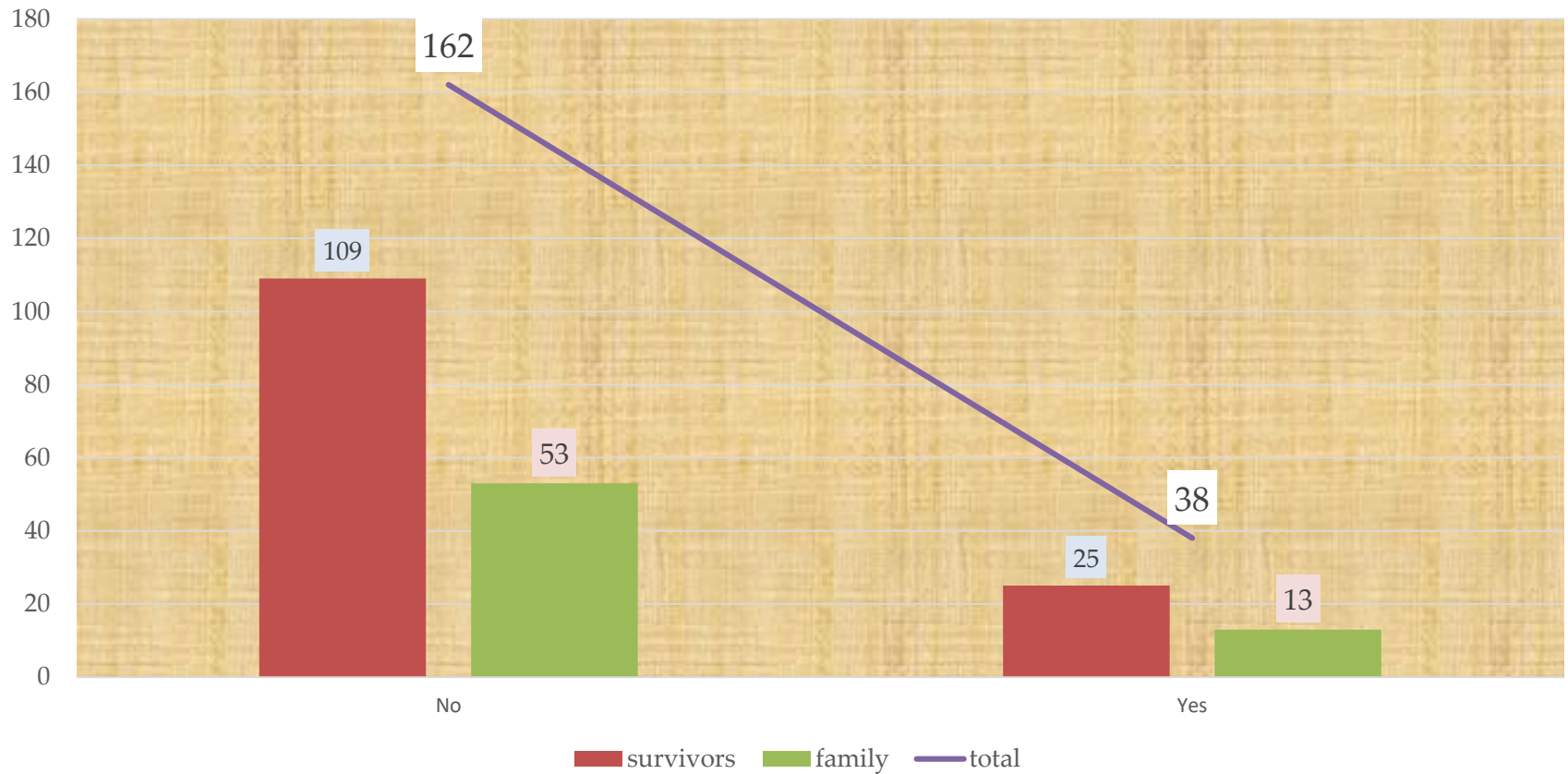
# Are you enrolled in school?

N = 139 Survivors, N = 68 Family / Friends



# Have you received any special education services, supports, or accommodations in a school or college program?

N= 200



# Summary of Life Experiences Since TBI

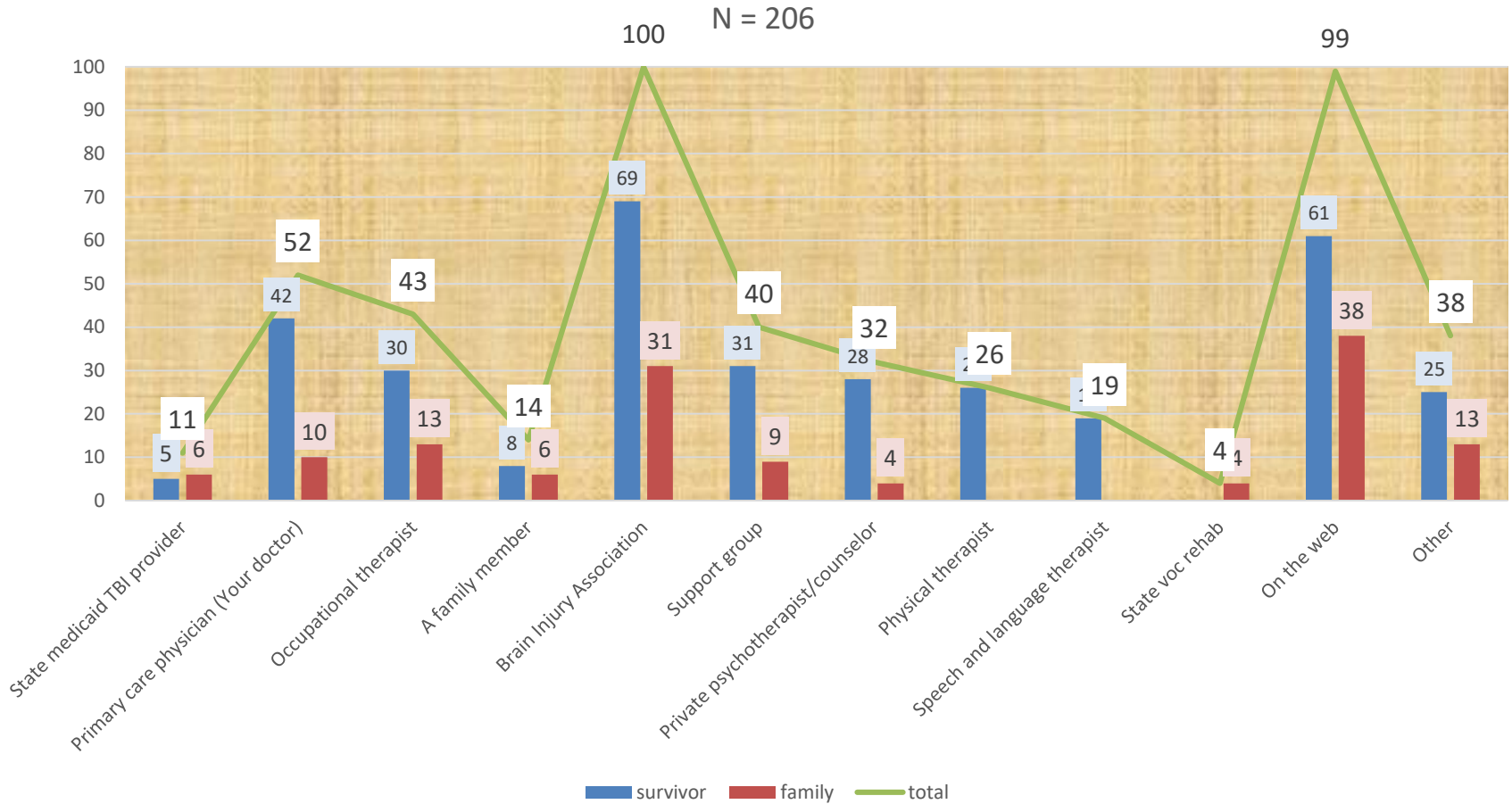
- Received or currently receiving mental health/counseling/psychotherapy services was the most common experience followed by past or current victim of domestic violence.
- 32 % report that they have not worked since the TBI while 20% report they work full-time.
- The most common reason for not working is that they can't do their former job (44%).
- 10% were enrolled in some type of school.
- 19 % reported receiving special education services, supports or accommodations in school or college.

# TBI System of Services





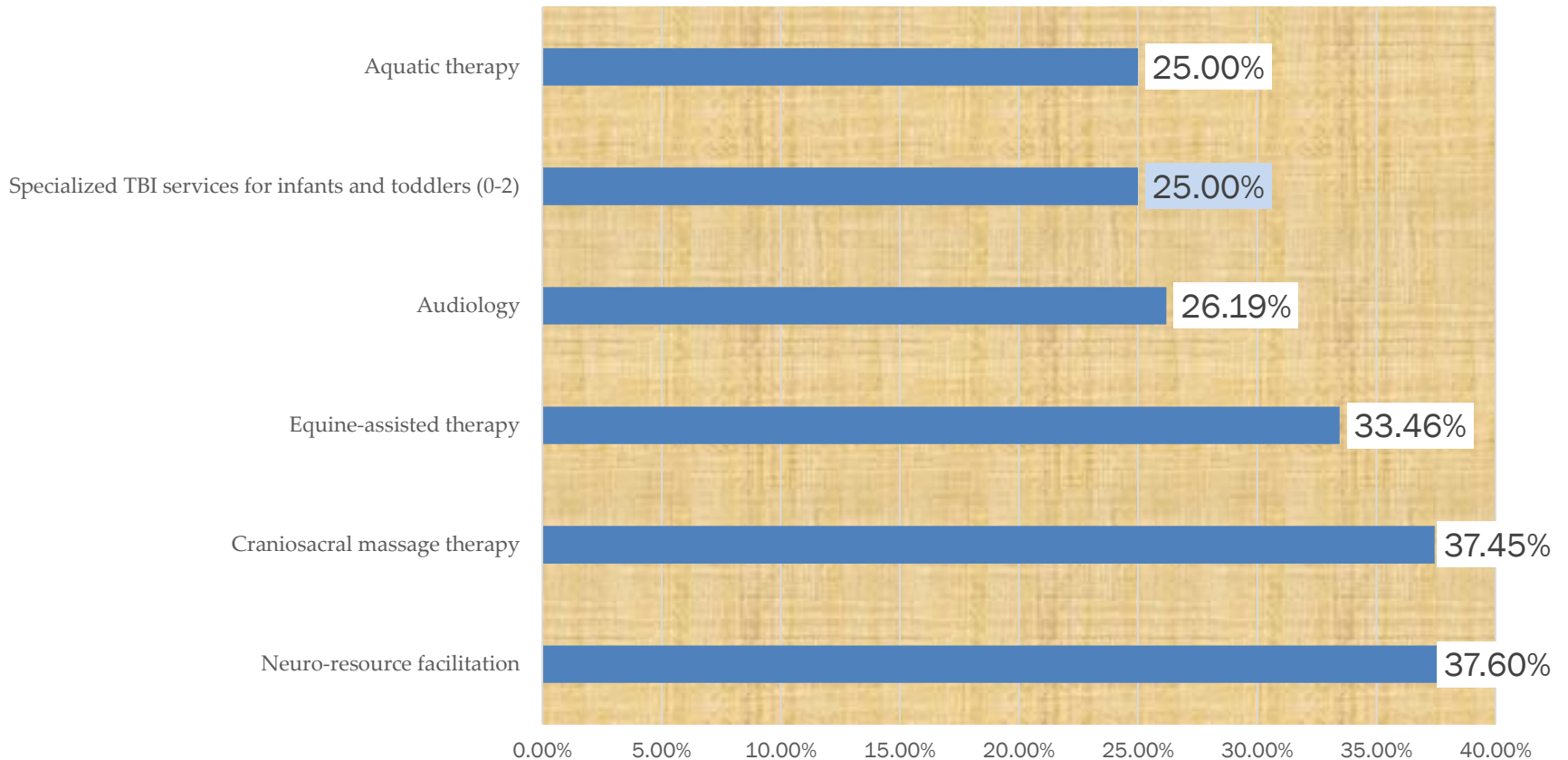
# Where do you get most of your information about TBI and TBI related services?



Please let us know how important you think the provision of that service is for individuals with traumatic brain injury.

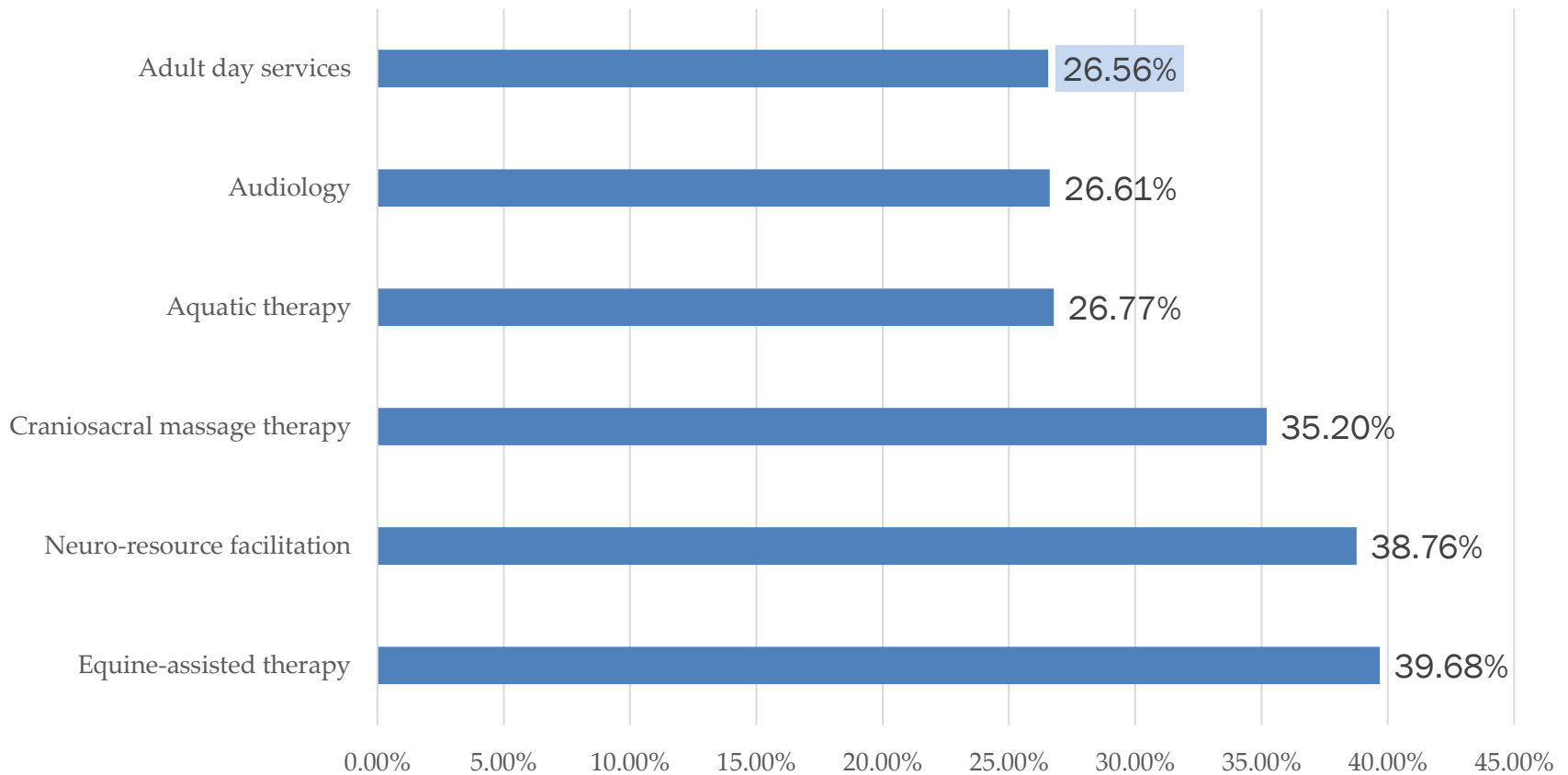
Selected - Do not know enough about this service to form an opinion

N = 262 survivor, family/friend, and providers



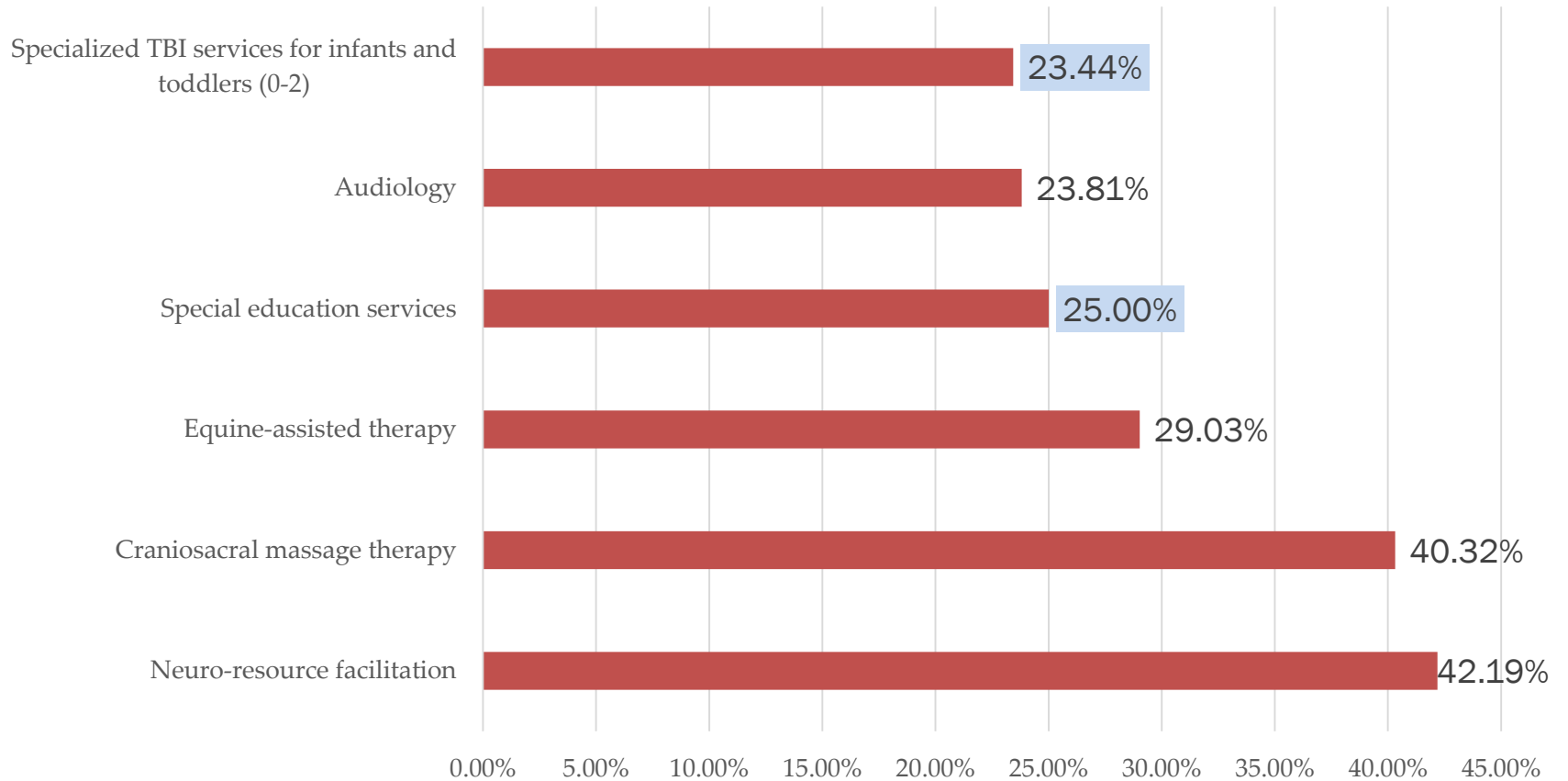
# Among Survivors Selected - Do Not Know Enough of the Service to Form Opinion

N= 129, survivors



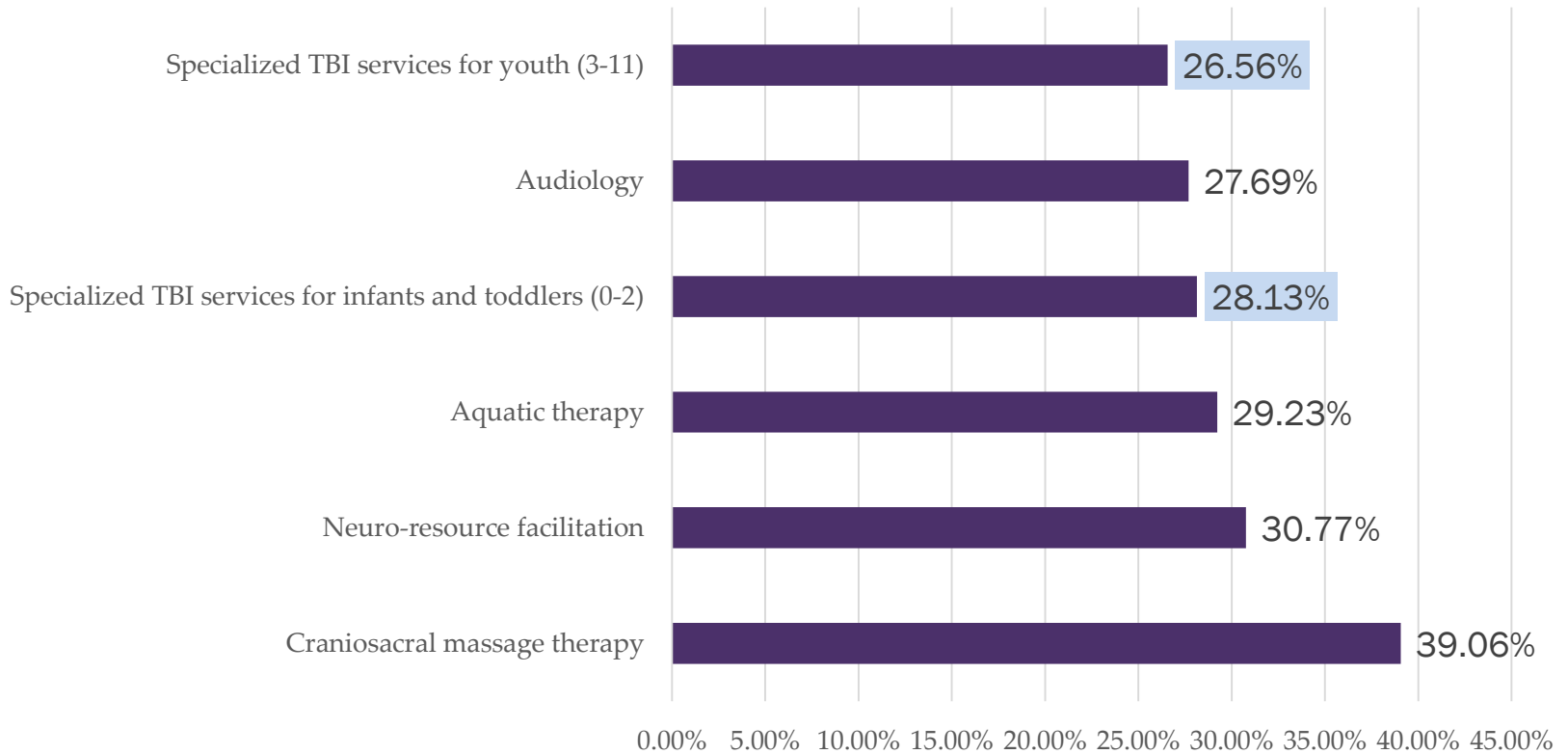
# Family/Friends Do Not Know

N = 66, family/friends



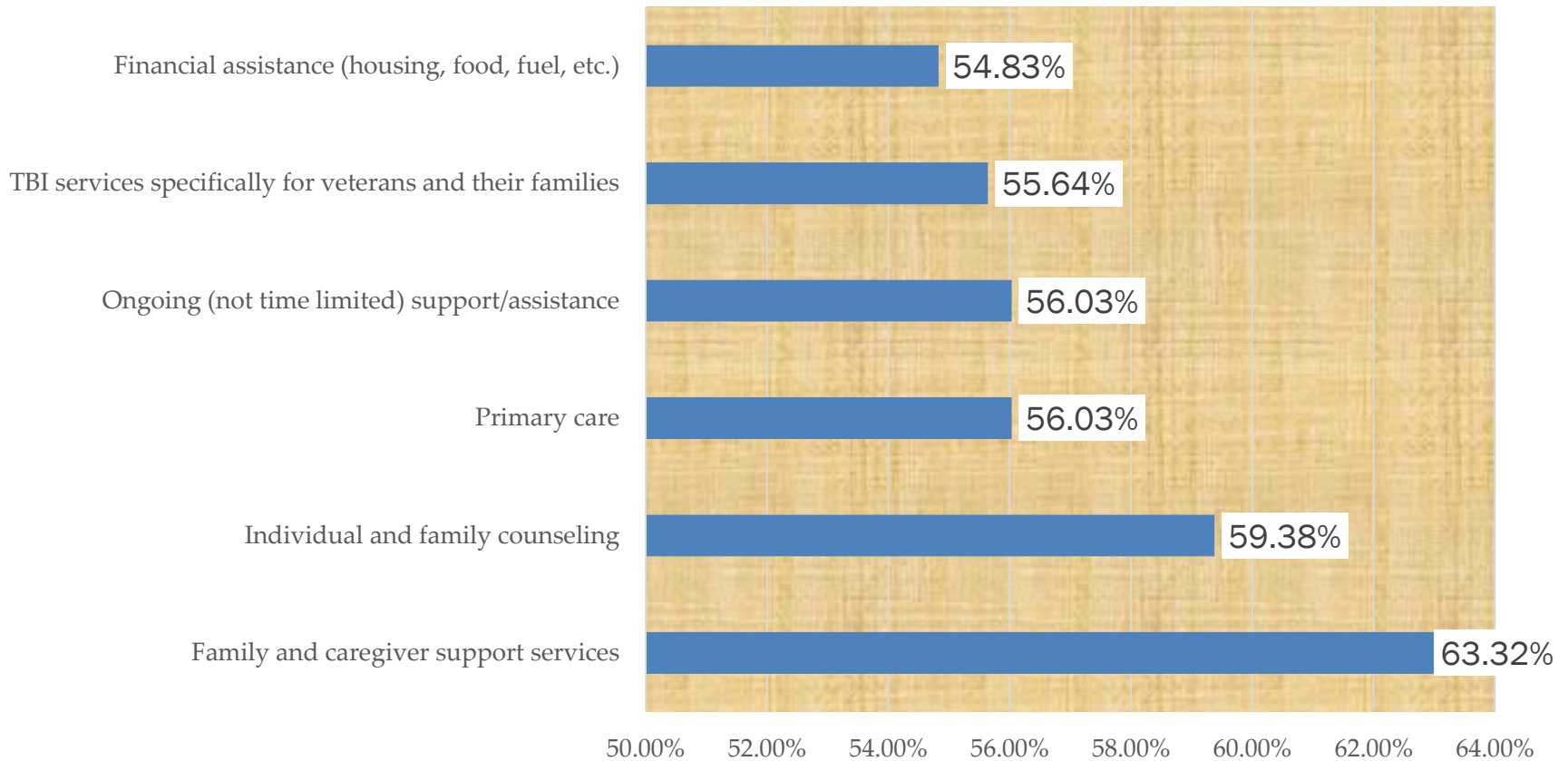
# Providers Do Not Know

N = 67, providers



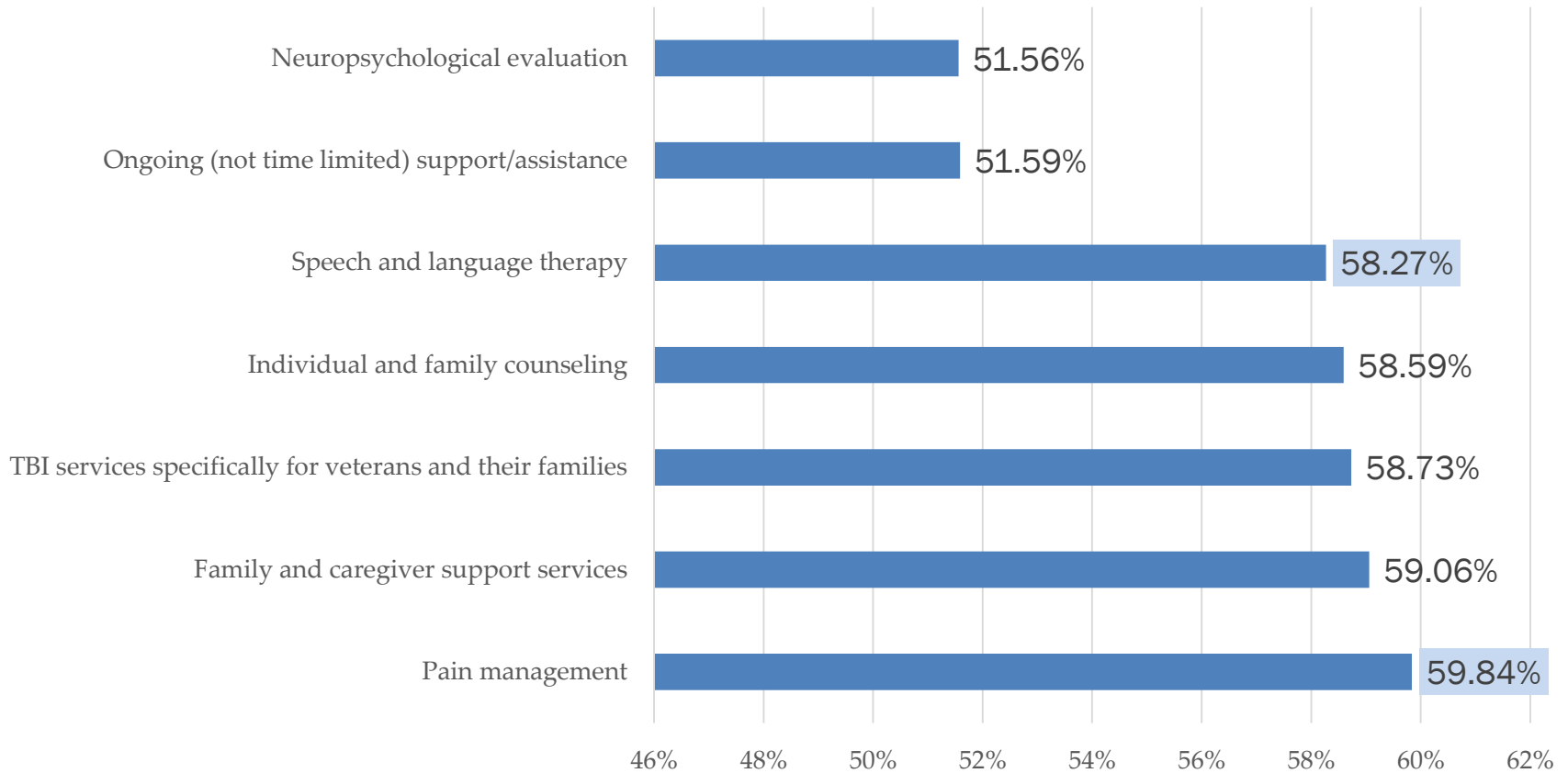
# Top Ranked Extremely Important Services

N = 262, survivors, family/friends, providers



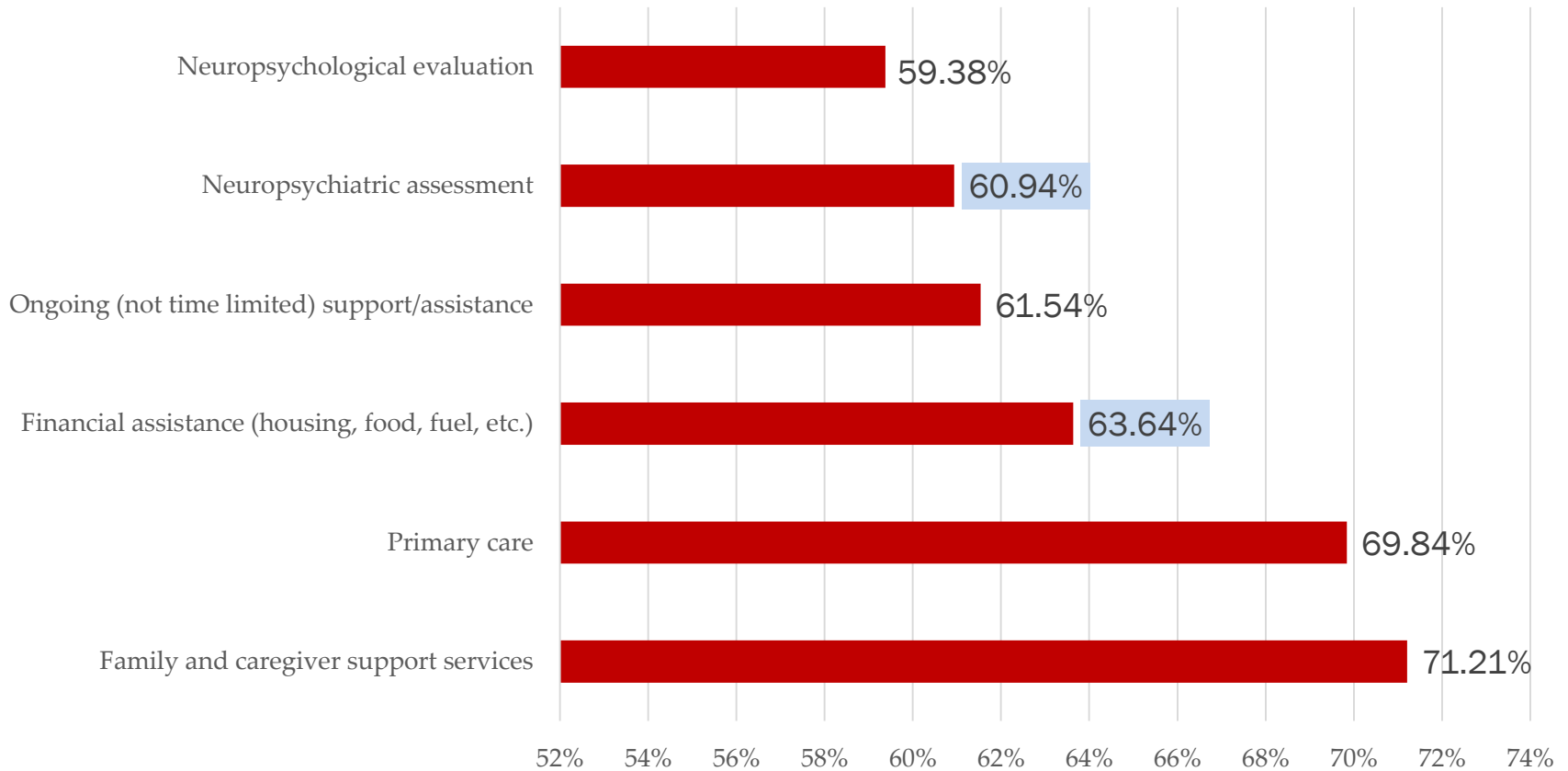
# Survivors Extremely Important

## 4. Extremely Important, N= 129 Survivors



# Family/Friends Extremely Important

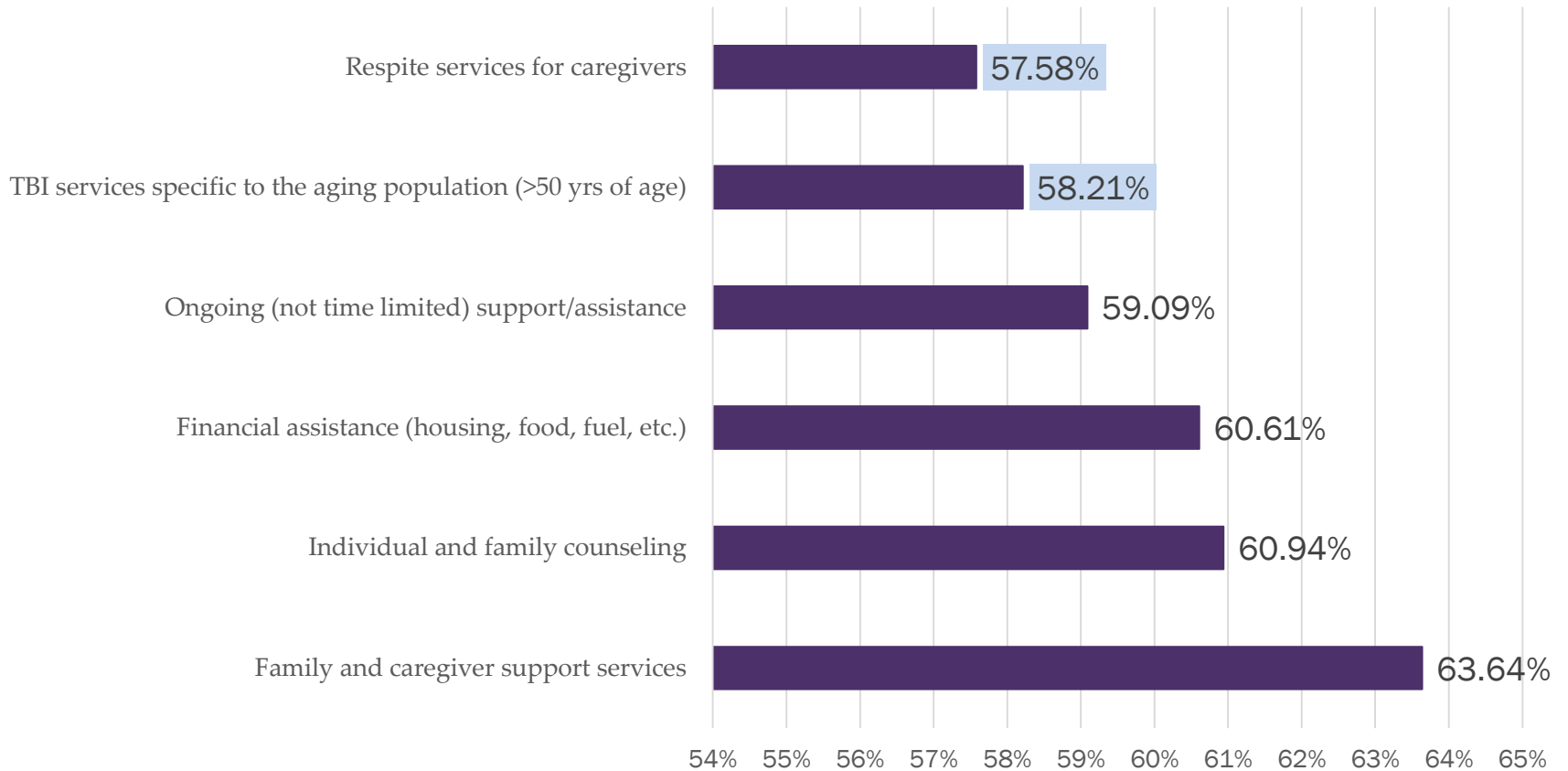
N = 66





# Providers Extremely Important

N = 67



# Summary of Extremely Important

## For all responses

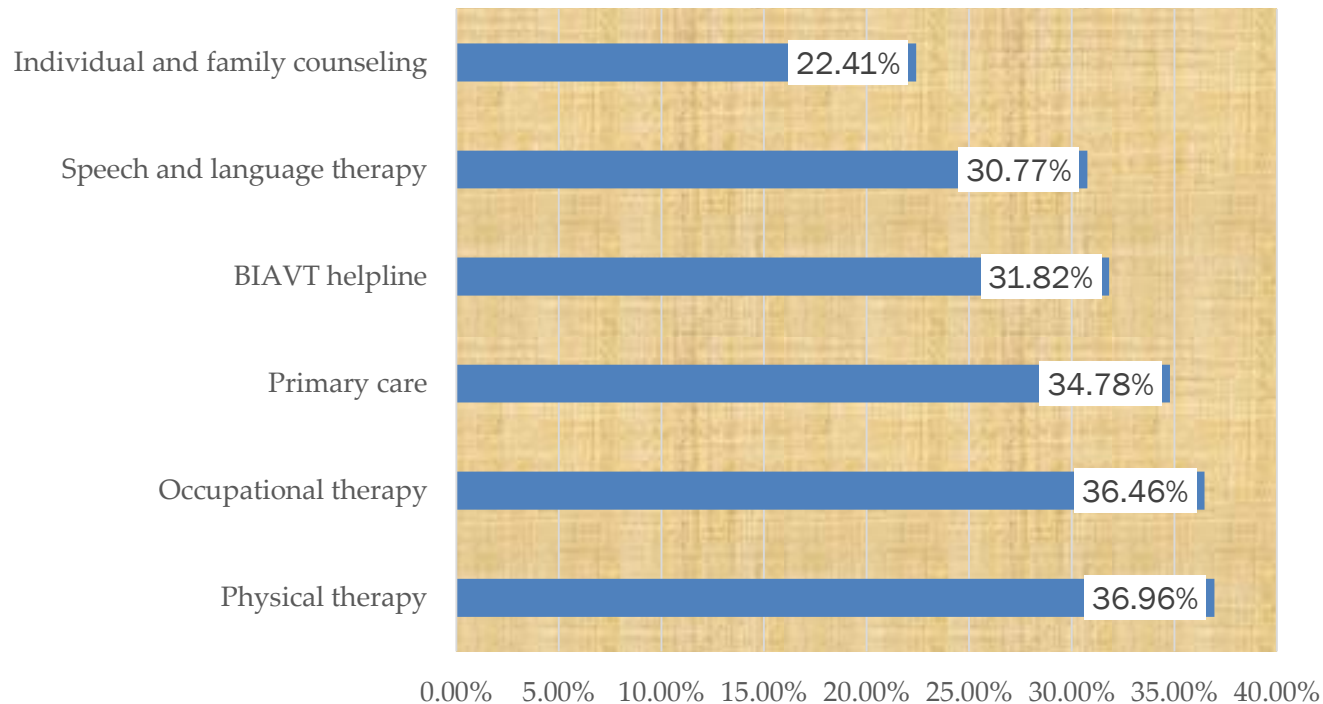
- Financial assistance
- Provider services
- Targeted services to vets and their families
- Ongoing (unlimited support)
- Individual and family counseling
- Caregiver/family supports

## Separating responses

- Providers added services for 50 + individuals with TBI and respite care
- Family/Friends added neuropsychiatric assessment
- Survivors added speech and language and pain management services

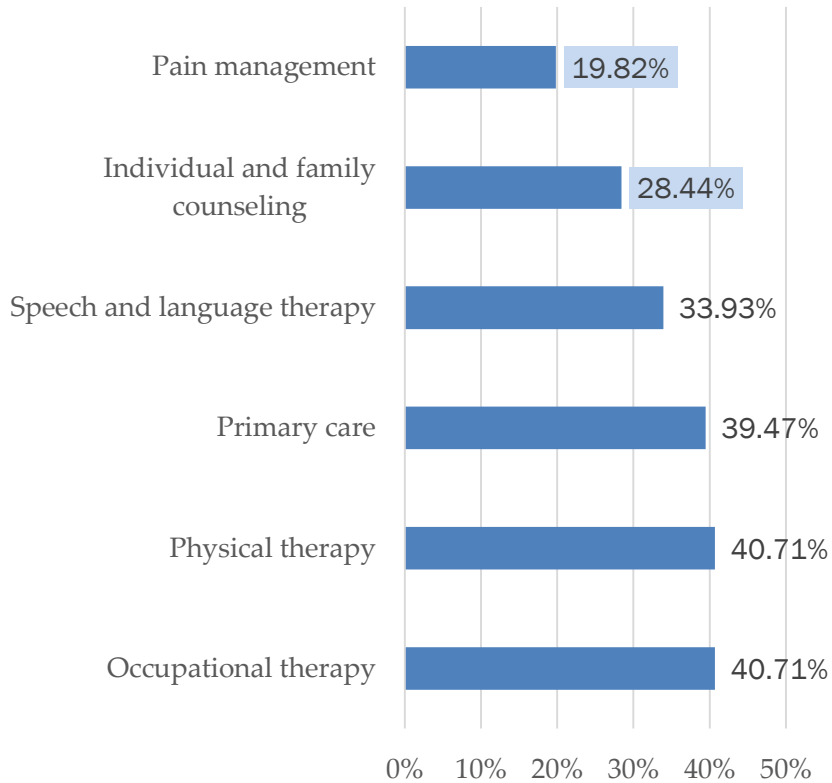
# For each type of service/assistance listed below, which choice best describes your satisfaction with the availability/accessibility of that service/program in Vermont for individuals with TBI and their families

1. Satisfied with the quality of services and their availability, N= 211

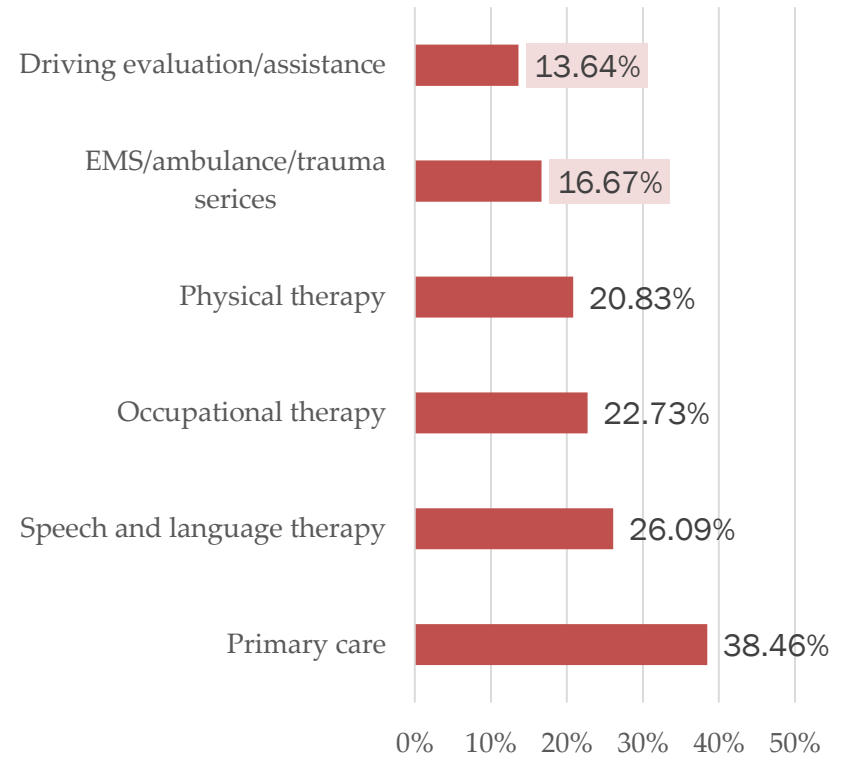


# Survivors & Family/Friends

Satisfaction with the quality of services and their availability, N = 117, Survivors

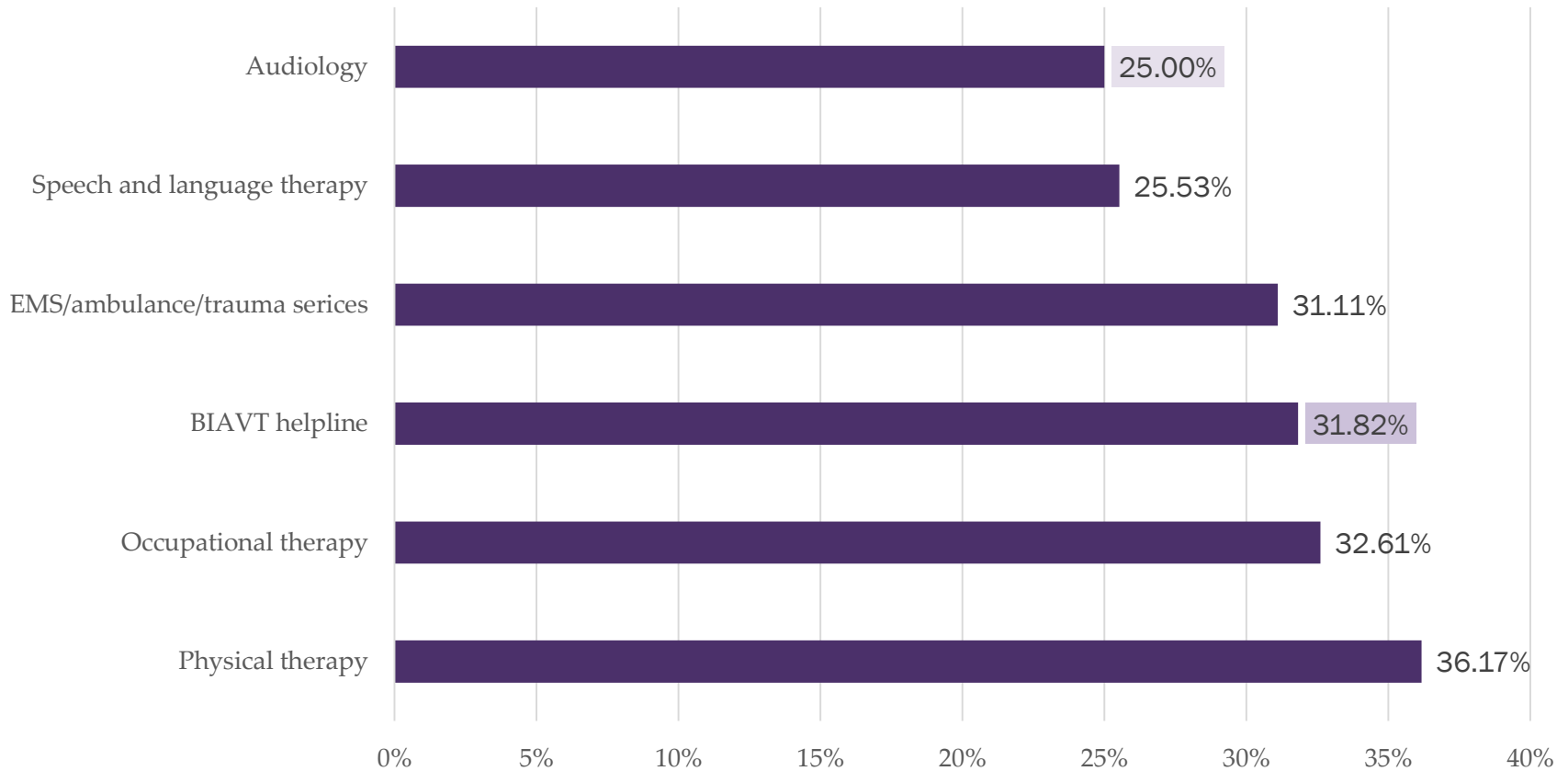


Satisfied with the quality of services and their availability, N = 44, Family/Friends



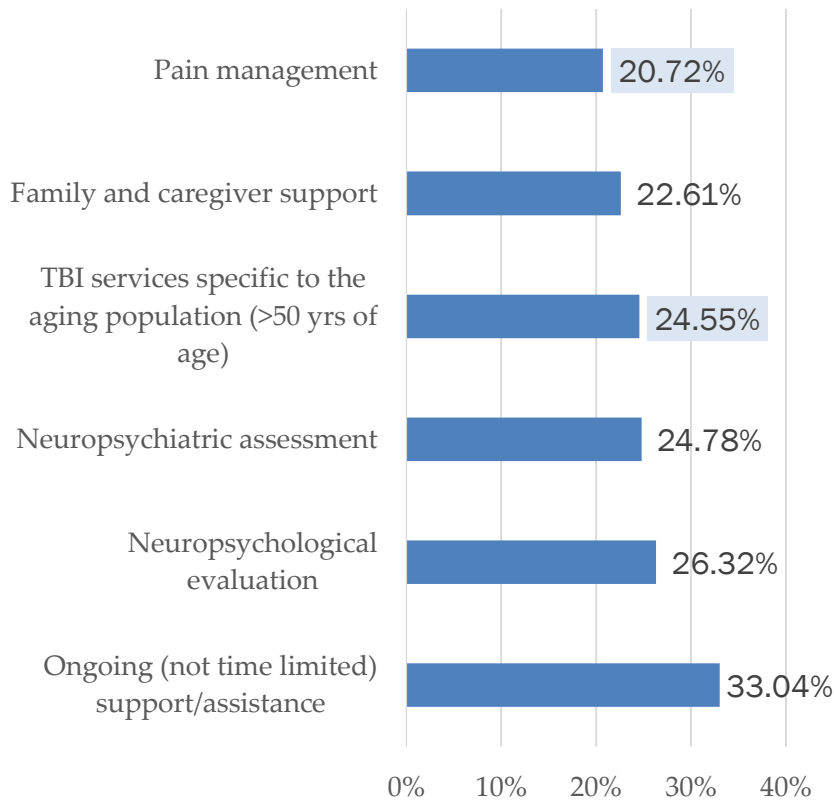
# Providers Responses

Satisfied with the quality of services and their availability, N = 50, Providers

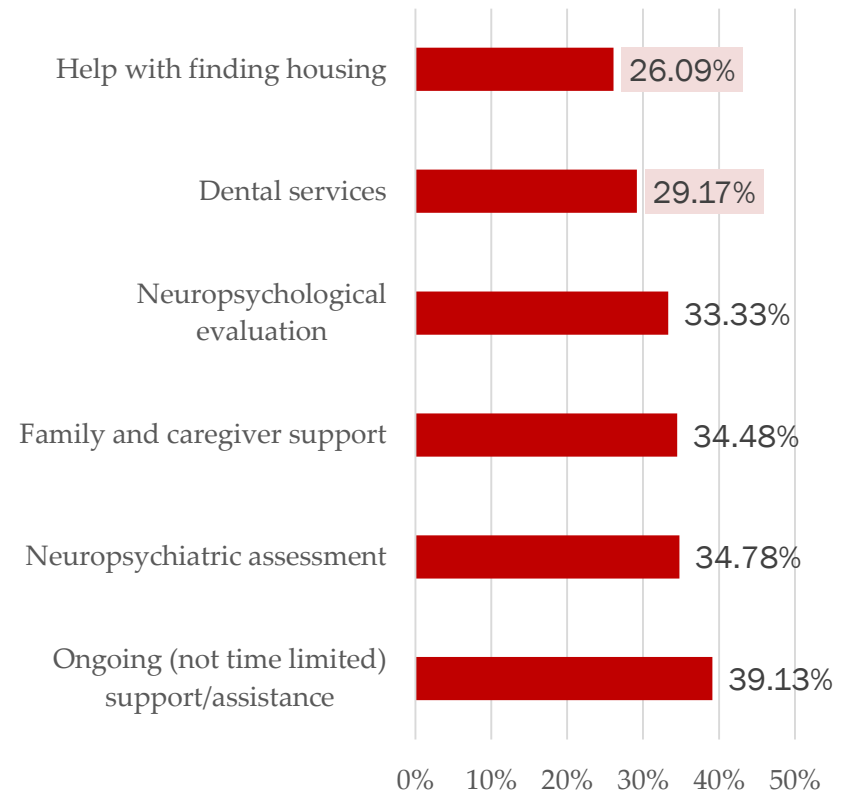


# Dissatisfaction With Services

3. Unsatisfied with the quality of services or their availability, N = 117

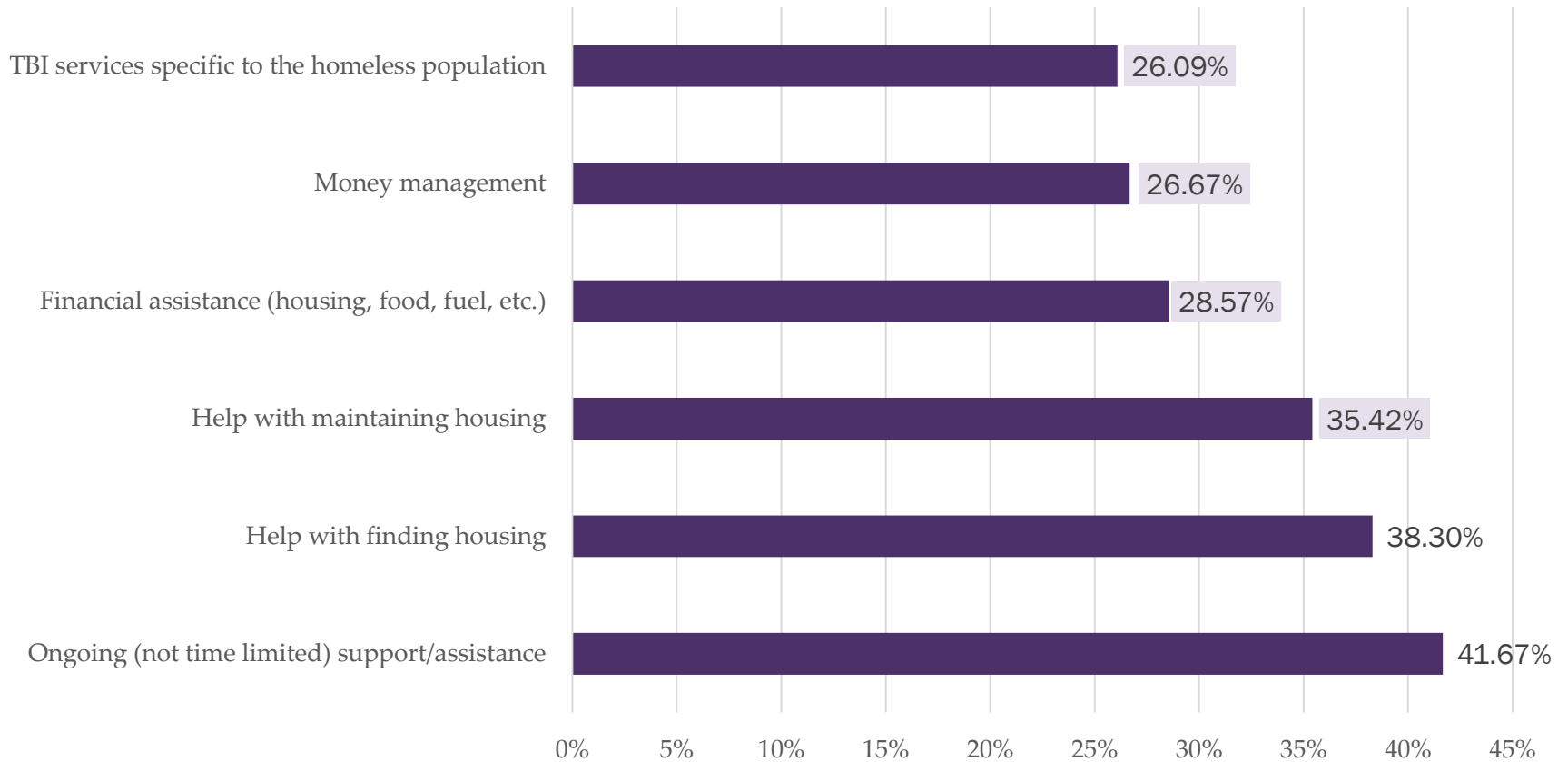


3. Unsatisfied with the quality of services or their availability, N = 44, Family/Friends



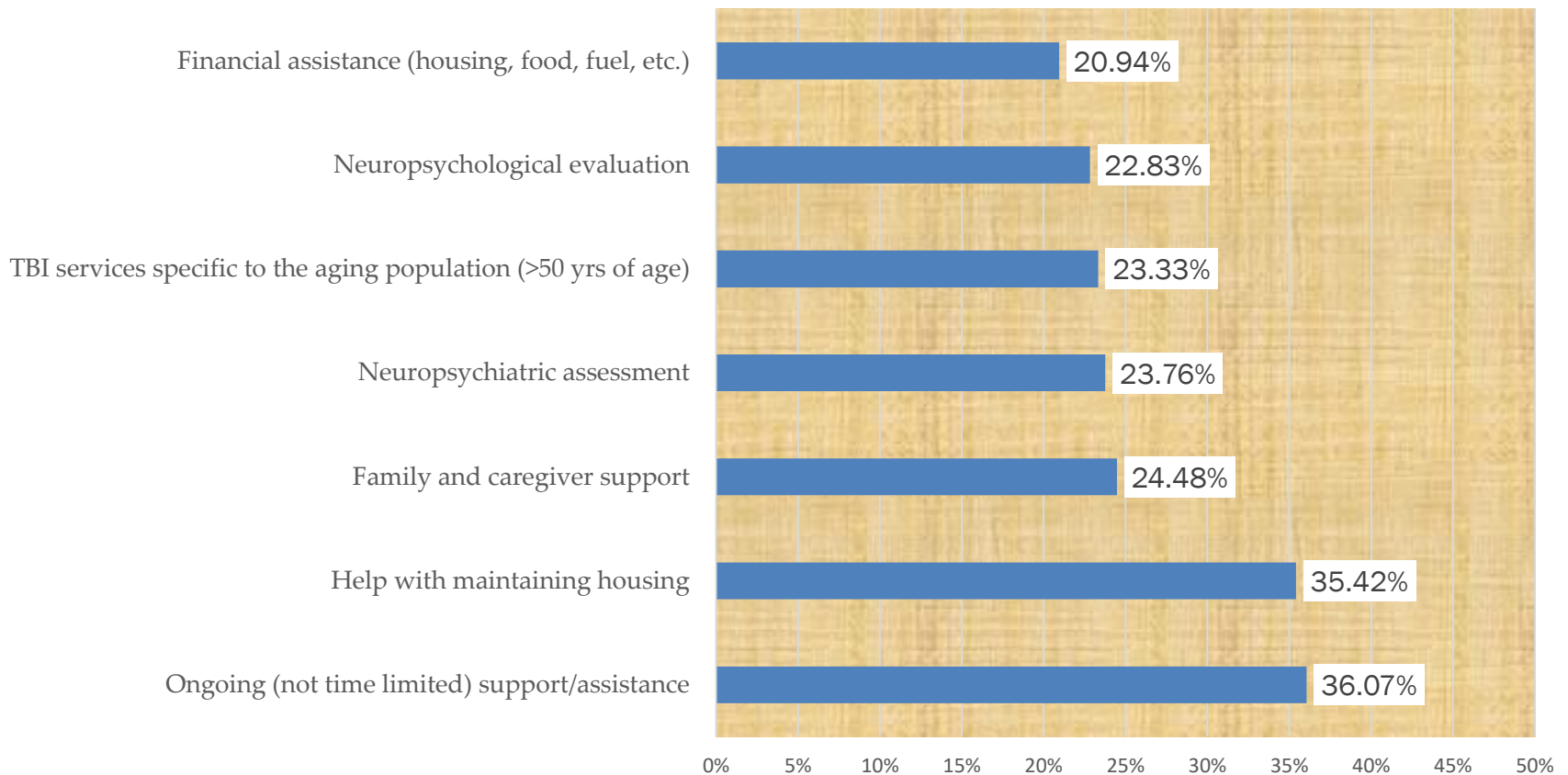
# Provider Dissatisfaction

3. Unsatisfied with the quality of services or their availability, N = 50



# Dissatisfaction with the availability/accessibility of that service/program in Vermont for individuals with TBI and their families – All responses

3. Unsatisfied with the quality of services or their availability all response, N = 211





# Recommendations



# Survey Questions – Open Ended

- Survivor, Family/Friends only:
  - What is helping you the most?
  - What additional services do you think are needed to better meet the needs of your family member/significant other/friend with TBI?
- Providers only:
  - What is working best in the current system?
  - What changes in services would you recommend to better meet the needs of individuals with TBI and their families in Vermont?
- Everyone – What would you like the people who plan statewide services and supports to know?

# What services do you think are helping you the most now with your TBI?

- Therapist, psychiatrist, counseling
- Occupational therapist
- Support groups
- Physical therapist
- Primary care
- Speech language
- BIA Conference
- Vocational rehab
- BIA VT
- Yoga, Love your brain
- Transportation
- Vision
- Discussion:
- Do these categories align with the satisfaction of the quality and accessibility of services?
- Do these align with your views of services and what helps the most?
- Is there anything missing?

# What additional services would you like?

- Support (e.g., family, legal, self, etc.)
- Professionals that know TBI (e.g., mental health, optometrist, etc.)
- Transportation of daily life things (e.g., groceries, etc.)
- Navigator, case management
- Job training, vocational rehabilitation, right job
- Adjusting to new normal (e.g., fun, daily, acceptance)
- Cranial sacral and hyperbaric treatments
- Financial, budgeting, literacy
- Access to (e.g., resources transition, discharge planning, etc.)
- Increase resources (e.g., resources, support, funding, guide, case management, training)

# What ideas would you want people who plan statewide services know?

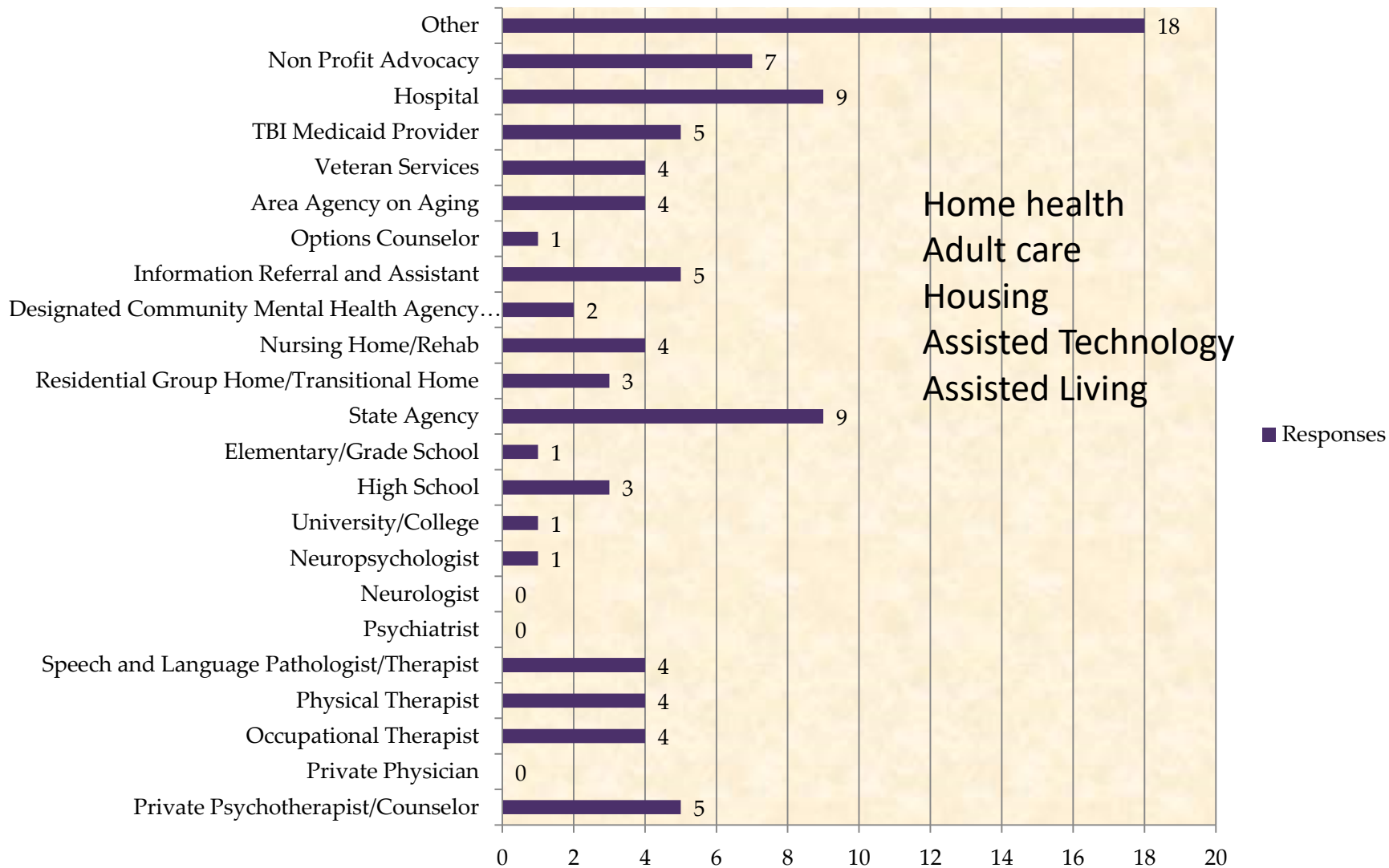
- Activity:
  - Review statements
  - What is similar?
  - Does one similarity or theme stand out as more important than another? Why?
  - Are there any statements that are stand alone but important to consider in development of the plan?
  - Report out to group.

# Provider Questions



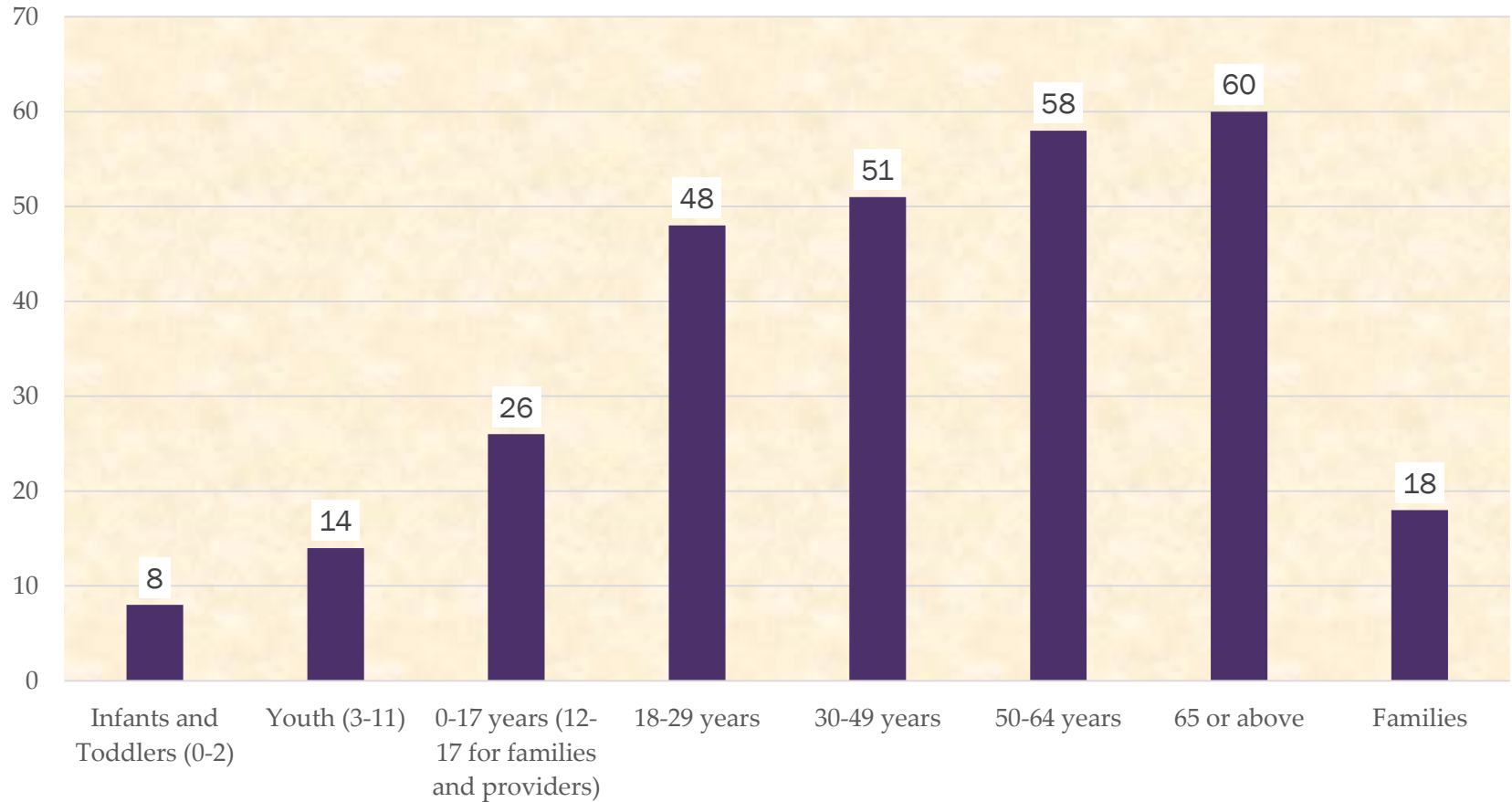
# What type of organization/agency/provider is this?

Check all that apply. N = 72



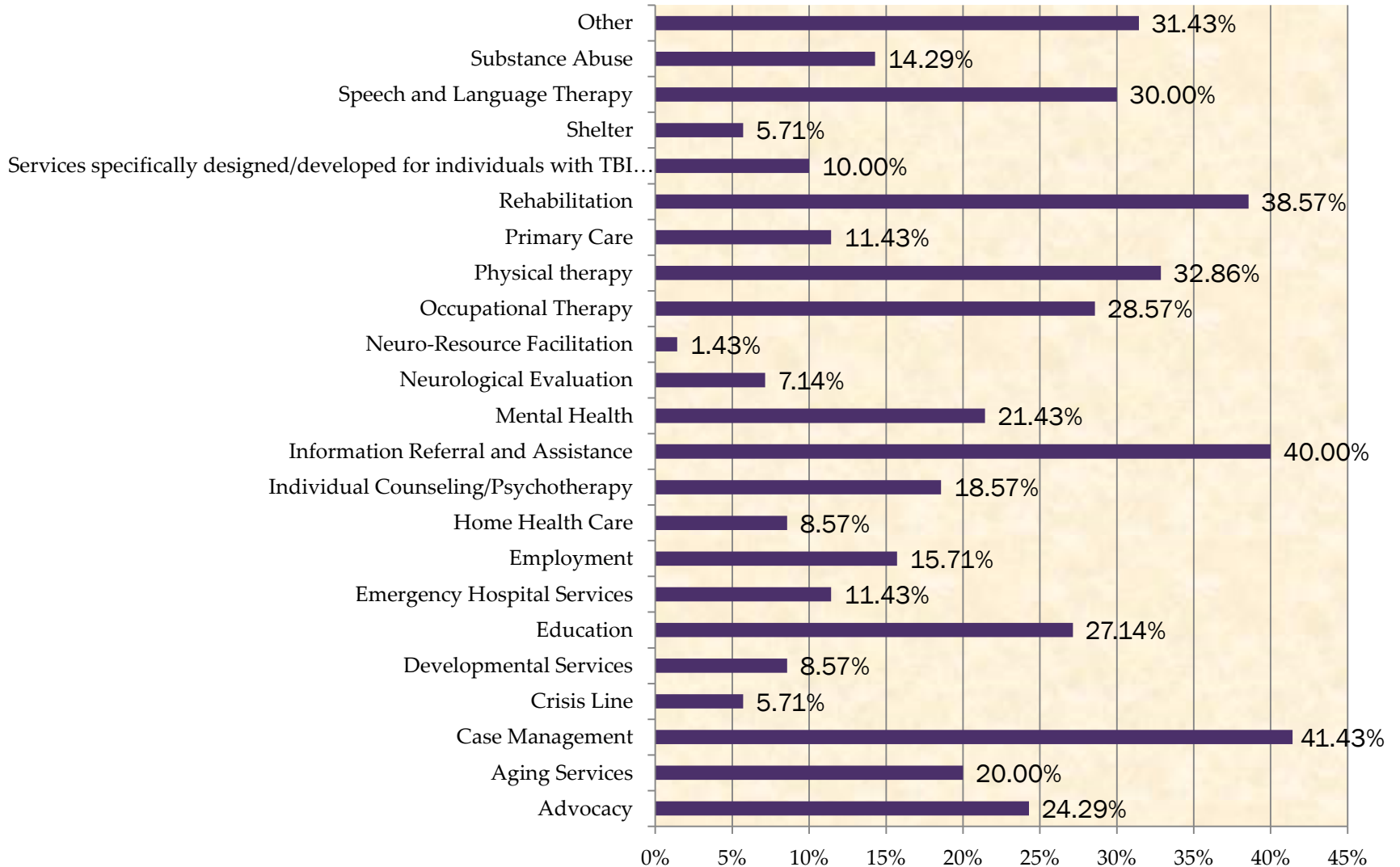
# What population does your agency serve?

# Providers in Survey Who Serve Each Age Range, N = 72



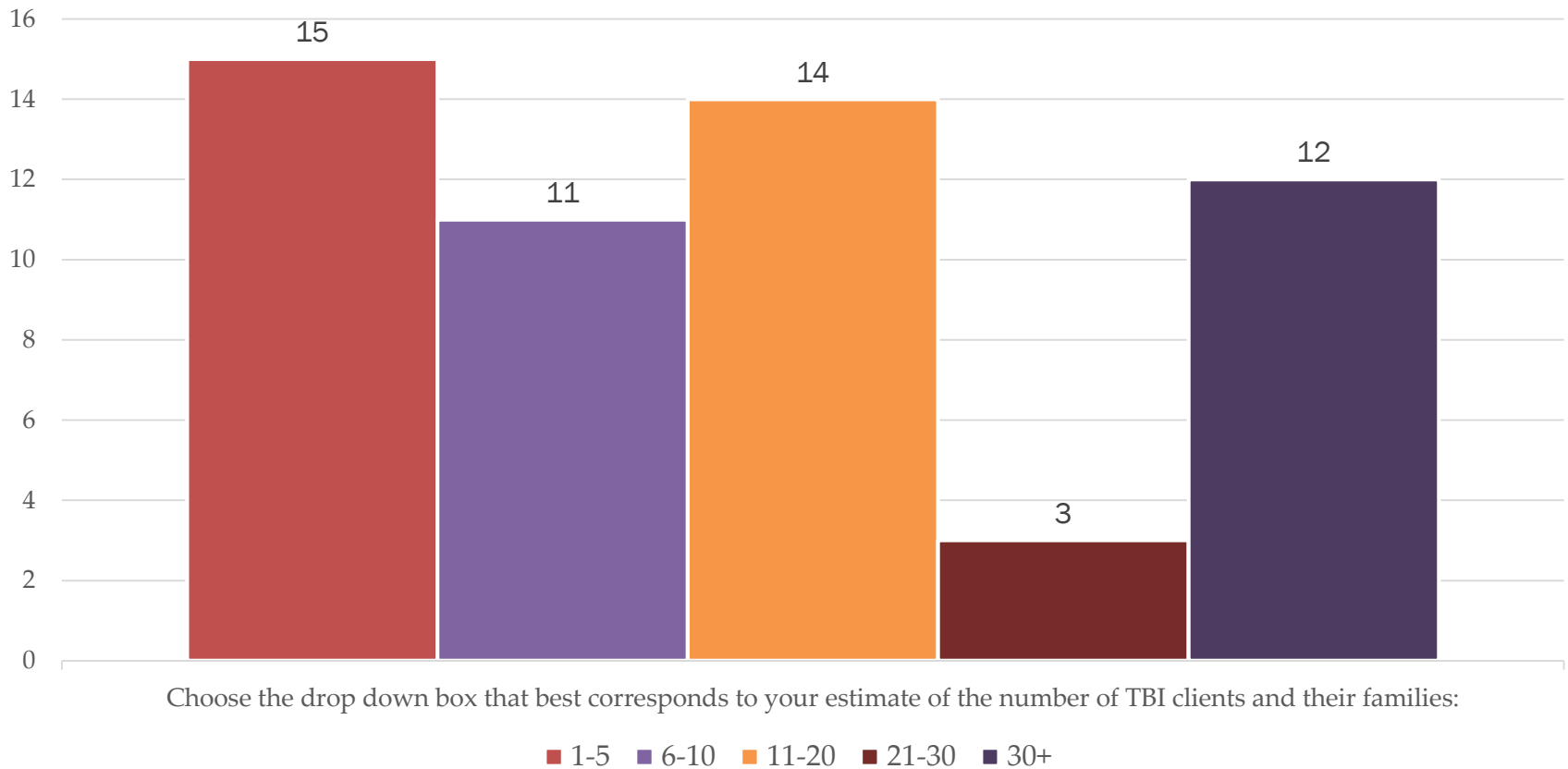


# What services does your organization provide? Select all that apply.

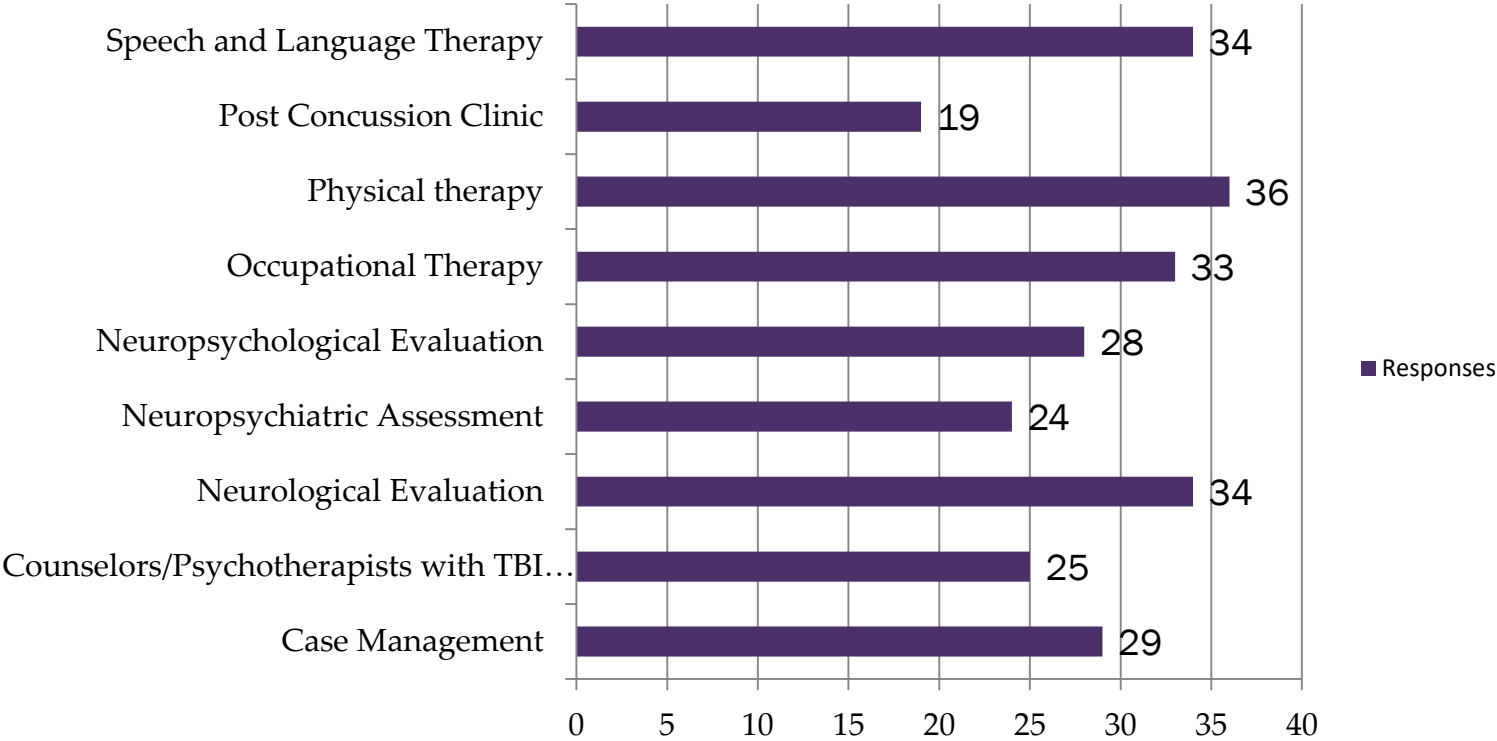


# Estimate of the unduplicated count of TBI clients and/or their families who received at least one service during the previous 12 months

N=55

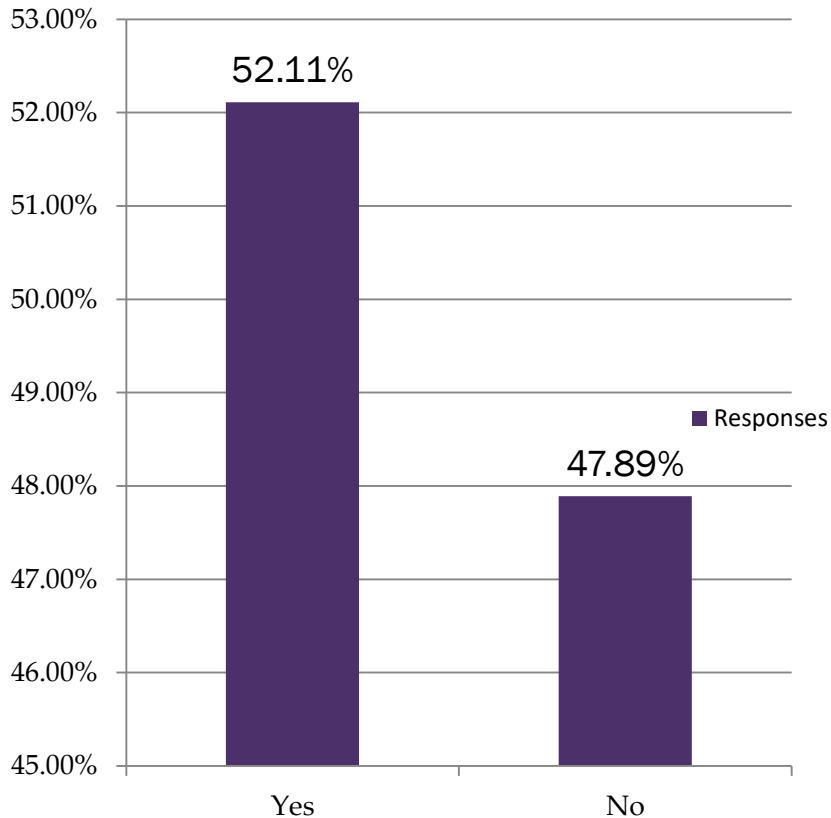


**Do you know of an appropriate referral for a person with a TBI for the following? N= 48**

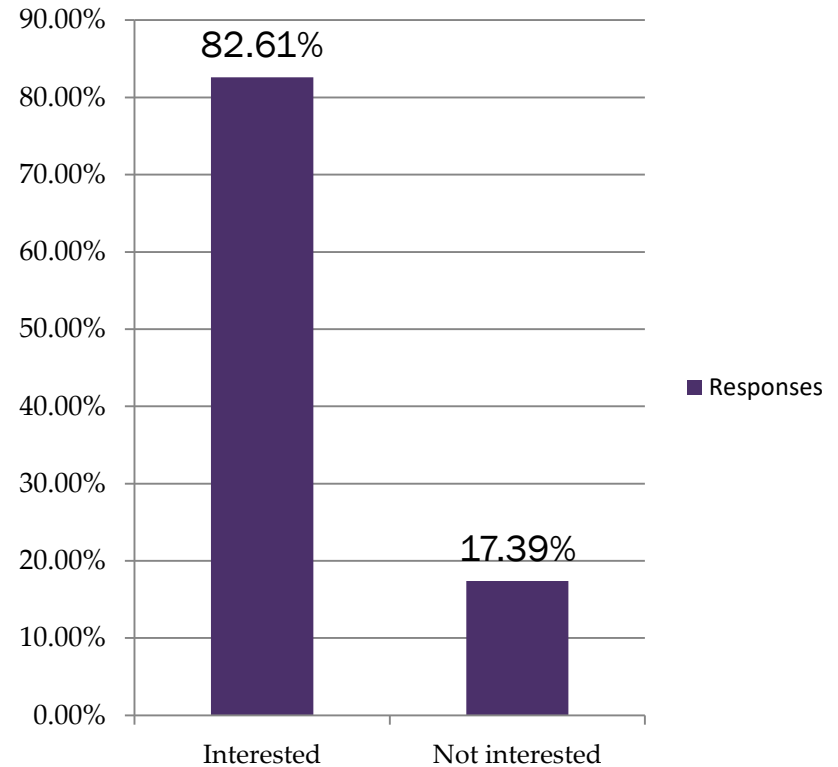


# Training Needs

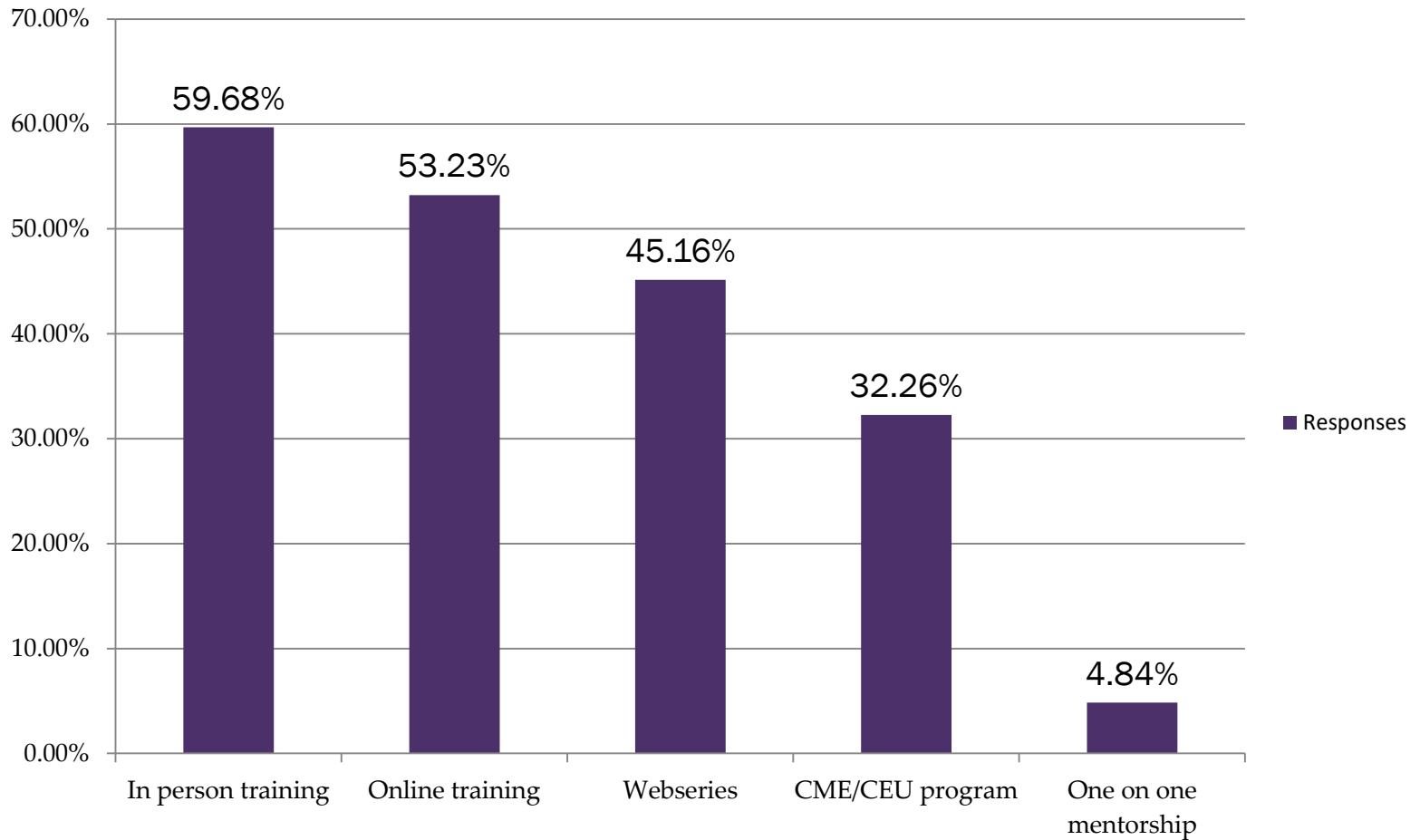
Do you feel like you have had adequate training to address the needs of patients with brain injury? N= 71



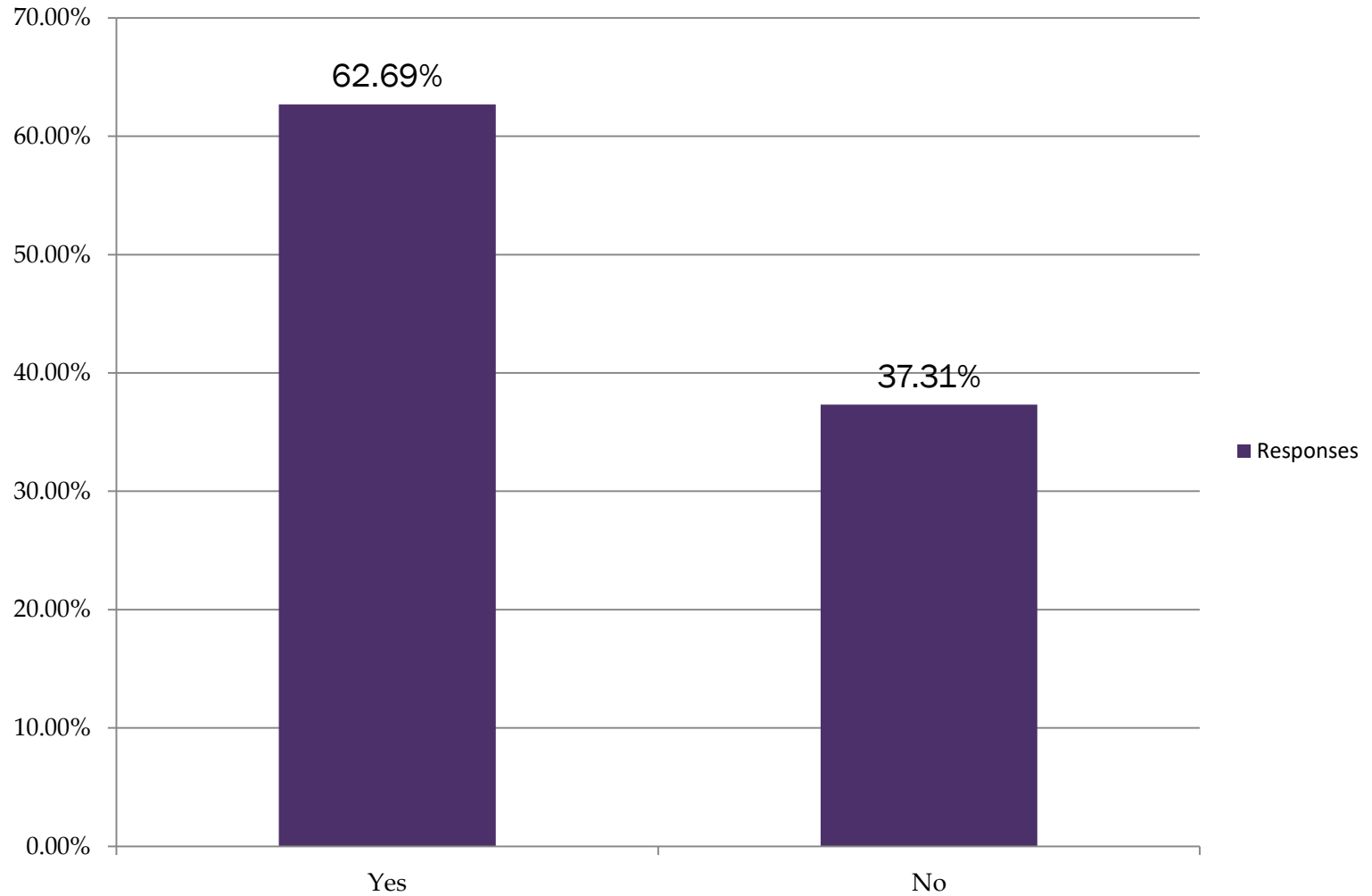
Please indicate your interest in receiving training for your organization regarding Traumatic Brain Injury. N =69



If you would like further training which of the following would you prefer (check all applicable options)? N = 62



## Do you feel your practice is adequately set up to handle patients with brain injury? N= 67



# Providers - What changes would you like to see?

- Access to resources in the community for transition and discharge planning
- Increase resources, supports and services, funding, case management
- Increase training – especially local training

# Providers – What changes in the system?





# Vermont State Brain Injury Strategic Plan- DRAFT 2019 – 2022



Vermont Agency of Human Services  
Department of Disabilities, Aging and Independent Living (DAIL)  
Adult Services Division (ASD) – Traumatic Brain Injury (TBI) Program

280 State Drive, HC 2 South

Waterbury, Vermont 05671-0270

Telephone: 802.241.0309

To receive this document in an alternate format, contact the ASD at telephone: 802.241.0303  
or e-mail [tbi.program@vermont.gov](mailto:tbi.program@vermont.gov) (placeholder e-mail)

Submitted June 30, 2019

**Pending Approval**

Submitted by Megan Tierney-Ward, Director of ASD, DAIL

Authored by Sheri Lynn, TBI Grant Manager and Sara Lane, TBI Program Manager, DAIL

With special thanks to our community partners, Vermont Brain Injury Advisory Board, State  
Plan Work Group, Brain Injury Association of Vermont and DAIL staff for their  
collaboration, dedication and wise counsel in the development of this Vermont State Brain  
Injury Strategic Plan.

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DRAFT

## Mission Statement and Core Principles

The Department of Disabilities, Aging and Independent Living's mission is to make Vermont the best state in which to grow old or to live with a disability – with dignity, respect and independence. The mission and core principles outlined in the [DAIL State Plan on Aging 2019- 2022](#) are integrated into the Vermont State Brain Injury Strategic Plan. On advice from the Vermont Brain Injury Advisory Board (VTBIB), the [Person and Family-Centered Care \(PFCC\)](#) core concepts also guide the approach to the plan. The commitment to the core principles and concepts builds on strengths to sustain and grow comprehensive and coordinated supports to individuals with all acquired brain injuries<sup>1</sup> and their families. The state and other centralized agencies like the Brain Injury Association of Vermont work hand-in-hand with providers at the community level to focus on awareness, early intervention, diagnosis and education for brain injury; resource development so individuals have access to individualized person and family-centered supports; and access to high quality services.

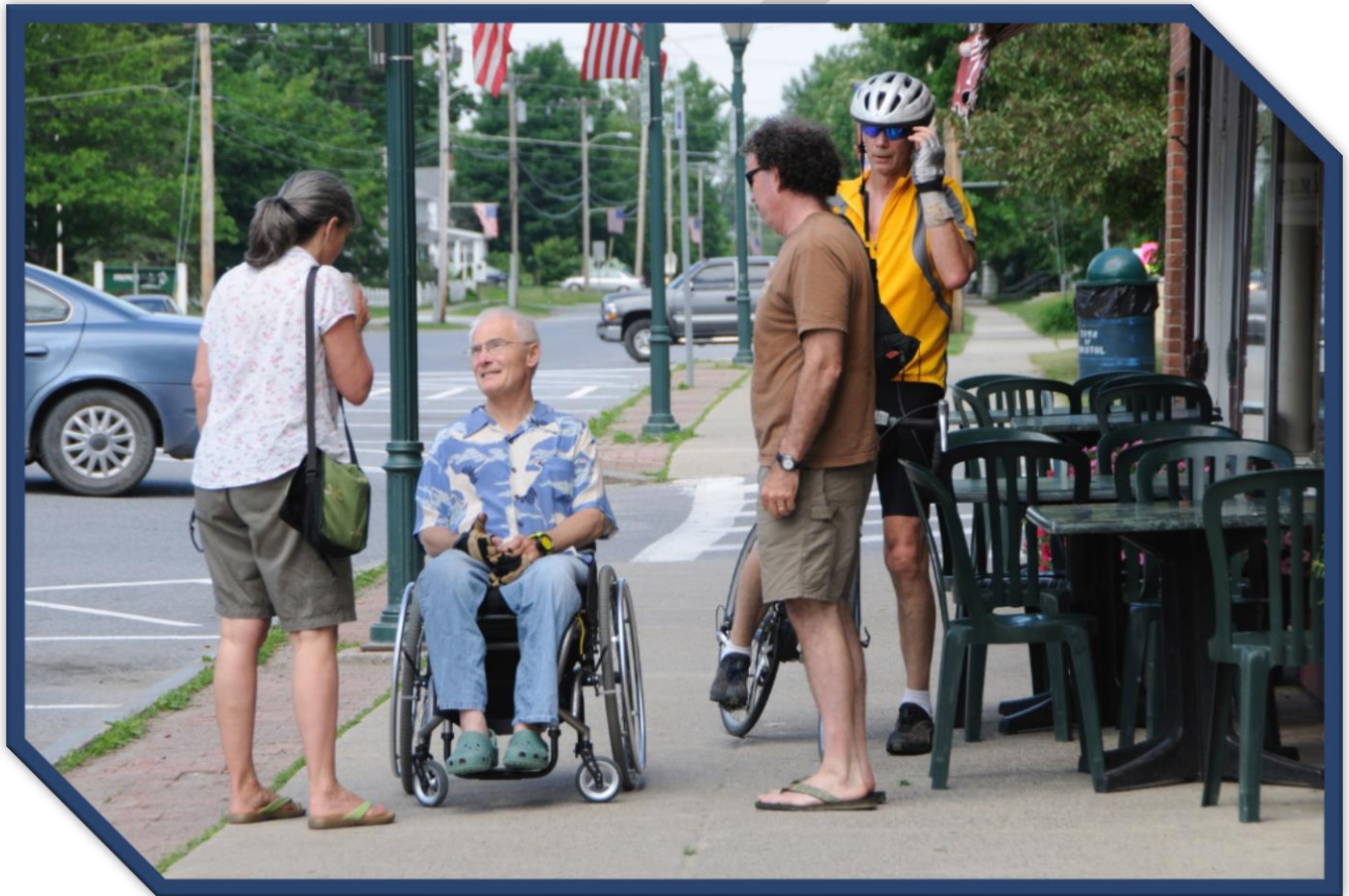
The principles are:

- **Person and family-centered care:** The individual and the family are at the core of all plans and services.
- **Participation:** The individual and the family are encouraged and supported to participate in care and decision making.
- **Respect and dignity:** Individuals, families, providers and staff are treated with respect.
- **Information Sharing:** Health care practitioners communicate and share complete and unbiased information with individuals and families in ways that are affirming and useful. Individuals and families receive timely, complete and accurate information in order to effectively participate in care and decision-making.
- **Independence:** The individual's personal and economic independence are promoted.
- **Choice:** Individuals will have options for services and supports.
- **Self-determination:** Individuals direct their own lives.
- **Living well:** The individual's services and supports promote health and well-being.
- **Contributing to the community:** Individuals can work, volunteer and participate in local communities.
- **Flexibility:** Individual needs guide our actions.

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<sup>1</sup> An acquired brain injury (ABI) is an injury to the brain that is not hereditary, congenital, degenerative, or induced by birth trauma. There are two types of acquired brain injury: traumatic and non-traumatic.

- **Effective and efficient:** Individuals' needs are met in a timely and cost-effective way.
- **Collaboration:** Individuals benefit from our partnership with families, communities, providers, and other federal, state and local organizations. Individuals, families, health care practitioners, and health care leaders collaborate in policy and program development, implementation and evaluation; in research; in facility design; and in professional education, as well as in the delivery of care.



## Introduction

**What is the Vermont State Brain Injury Strategic Plan?** The Department of Disabilities, Aging and Independent Living received a three-year grant (June 1, 2018 – May 31, 2021) from the Administration for Community Living (ACL). The purpose of the grant is to develop, implement and evaluate a plan for building upon and improving the current system of care to support individuals who experience brain injury. The 2019 – 2022 Vermont State Brain Injury Strategic Plan outlines how the State of Vermont, brain injury providers and other service providers will identify and refer any Vermonter that experiences a traumatic brain injury<sup>2</sup> and their family to high quality services and supports. The plan also expands to include individuals with non-traumatic brain injury, which is an alteration in brain function or pathology caused by an internal force. Stroke, lack of oxygen from drowning, drug overdose or other hypoxic/anoxic injury, seizures and tumors are examples of non-traumatic brain injury ([Brain Injury Association of America](#)).

The plan establishes the long-term outcomes and goals over the 4- year period. Short-term objectives break the goals down to shorter, achievable and measurable results for individuals and families accessing the system. The strategic plan is a dynamic framework that improves the likeliness of success. The Vermont Brain Injury Advisory Board will provide advice to DAAIL as the plan’s strategies roll out. Needs assessment and capacity building are other key components of the process to ultimately achieve the goals of the plan (Figure 1).

Figure 1: Strategic Plan Components



---

<sup>2</sup> A traumatic brain injury (TBI) is defined as an alteration in brain function, or other evidence of brain pathology, caused by an external force. Traumatic impact injuries can be defined as closed (or non-penetrating) or open (penetrating).

**What are the goals of the plan?** These are underdevelopment and expected to be completed by the December of 2018.

Goal 1: *To be determined related to focus area Early Intervention and Education*

Goal 2: *To be determined related to focus area Resource Development*

Goal 3: *To be determined related to focus area Services*

**Who will do the work of the plan?** Vermont has direct service providers and partners that work with individuals with brain injuries and their families. These include but are not limited to the following:

- **Agency of Education** – youth prevention efforts to reduce concussions
- **Brain Injury Association of Vermont** – central hub for outreach and awareness, referrals, support groups, and training
- **Department of Corrections** – screening and referral of individuals detained or sentenced in the State’s correction system that identify positive for a traumatic brain injury
- **Department of Disabilities, Aging and Independent Living (DAIL)** – State Traumatic Brain Injury Program, Choices for Care, Money Follows the Person, Older Americans Act and more
- **Department of Health**- surveillance, Injury Prevention Program, Alcohol & Drug Abuse Program, and Maternal & Child Health
- **Department of Mental Health** – coordination of care for individuals with co-occurring mental health and brain injury conditions
- **Department of Veterans Affairs** – services to veterans
- **Department of Vocational Rehabilitation** – support for training and employment
- **Disabilities Rights Vermont** – advancing the rights of Vermonters with disabilities and mental health needs
- **Vermont Family Network** – support and services for families of children with disabilities
- **Vermont Brain Injury Advisory Board** – advise DAIL on programs, services and supports and help with systemic improvement and evaluation of the state brain injury strategic plan.

**How will progress be tracked?** The Agency of Human Services (AHS) and each Department have two responsibilities related to population and performance accountability. The Vermont

State Brain Injury Strategic Plan applies the Results Based Accountability (RBA) approach to accomplish both.

1. Collaborate with partners to achieve population outcomes.
  - a. Establish population outcomes of well being
  - b. Establish indicators to measure progress
  - c. Act as one partner in developing collaborative strategies – “turning the curve”
2. Manage performance internally to improve outcomes for those we serve.
  - a. Measure performance more meaningfully (including through contracts/grants)
  - b. Improve performance – “turning the curve” is committed to results- based accountability, which means that the plan has identified ways to measure progress (Vermont AHS Intranet, Performance and Process Improvement).

**Where can I go to learn more and support the efforts?** The Vermont Brain Injury Advisory Board (VTBIB) meets four times a year and the public or people interested in participating on the board are encouraged to attend. Please contact (*placeholder for central e-mail*) about board vacancies. The VTBIB meetings are scheduled in advance for the year and posted to the DAIL website (*add link here*).

**Contact:**

Sara Lane, Traumatic Brain Injury Program

Sheri Lynn, Traumatic Brain Injury State Partnership Grant

Main Line, (802) 241-0294

[www.asd.vermont.gov/special-projects](http://www.asd.vermont.gov/special-projects)(*placeholder website*)



## Focus Areas

The State Plan Work Group discussed the results and comments of the 289 respondents of the 2018 Needs Assessment Survey, conducted by the Brain Injury Association of Vermont. These results were compared to priorities or focus areas from other state traumatic brain injury plans and to Vermont’s 2003 Statewide Action Plan for Vermonters with Traumatic Brain Injury and their Families (see Figure 2).

Figure 2 Comparison Table

CONTENT	VERMONT	MISSOURI	IOWA
<b>CURRENT STRATEGIC PLAN YEAR</b>	Action Plan for Vermonters Dated 11.1.2003 and DAIL State Plan on Aging 2018	2012 – 2017	2018- 2021
<b>PRIORITIES OR FOCUS AREAS</b>	Education and Awareness	Prevention	Prevention of Brain Injury
	Enhancement of Services	Services and Funding	Individual and Family Access
	Expansion and Improvement of Key Services and Supports	Education and Family Peer Supports	Service System Enhancement

After comparison between the states and needs assessment surveys, it was determined that the three priorities areas (focus areas) for Vermont are:

- Early identification and education
- Resource development
- Services

The State Plan Work Group reviewed the outcomes laid out in the 2003 Vermont TBI Action Plan and placed each into the three focus areas. A description for each focus areas follows on the next section of this document.

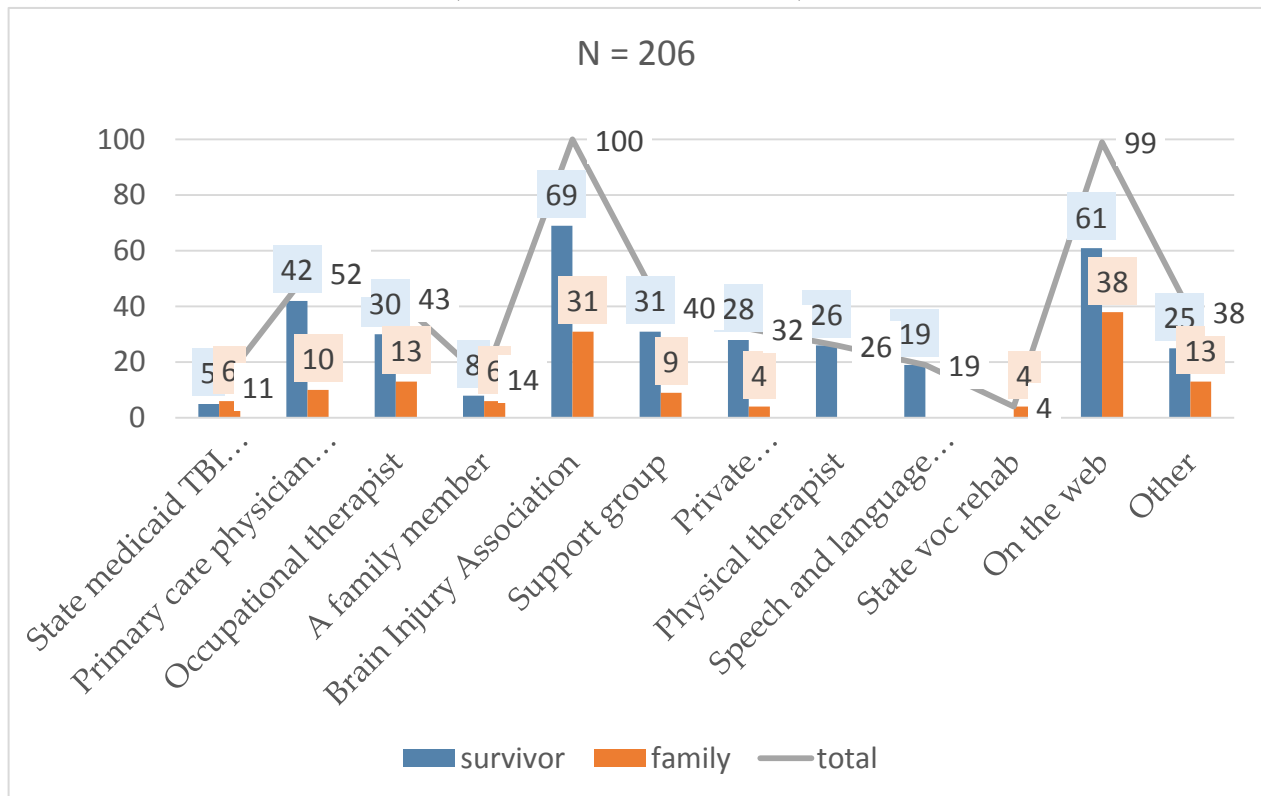
## Focus Area One: Early Identification and Education

Early identification and education mean that there is broad awareness and outreach. Prevention approaches are in place to promote brain health and reduce the causes of brain injury, such as promoting helmet use. Outcomes can be improved or better understood by the individual and family when screening and diagnosis is timely and soon after someone acquires a brain injury. Education includes the definition of brain injury; signs and symptoms; general public education & prevention tips; and awareness of prevalence in the community and targeted to vulnerable populations like the incarcerated, minorities, the elderly, those in domestic violence situations, youth playing contact sports and others.

**By the end of the 4-year plan Vermonters will see the following changes.**

Outcome 1: Increase the early identification and timely referral to services and supports for all individuals with a brain injury. Rational: Diagnosis of a brain injury and the severity is complex. A person may need further assessment to better understand what services will meet the needs of the individual.

Figure 3 Education Sources (2018 Needs Assessment)



Outcome 2: Improve the knowledge and skills of all providers in the health care system to increase identification and enhance quality care and services. Rational: There is both interest and need to educate the workforce. (The Needs Assessment indicated preferred methods of training among the 74 providers who answered the survey (see Figure 5)

Figure 4 Providers Response for Training (2018 Needs Assessment)

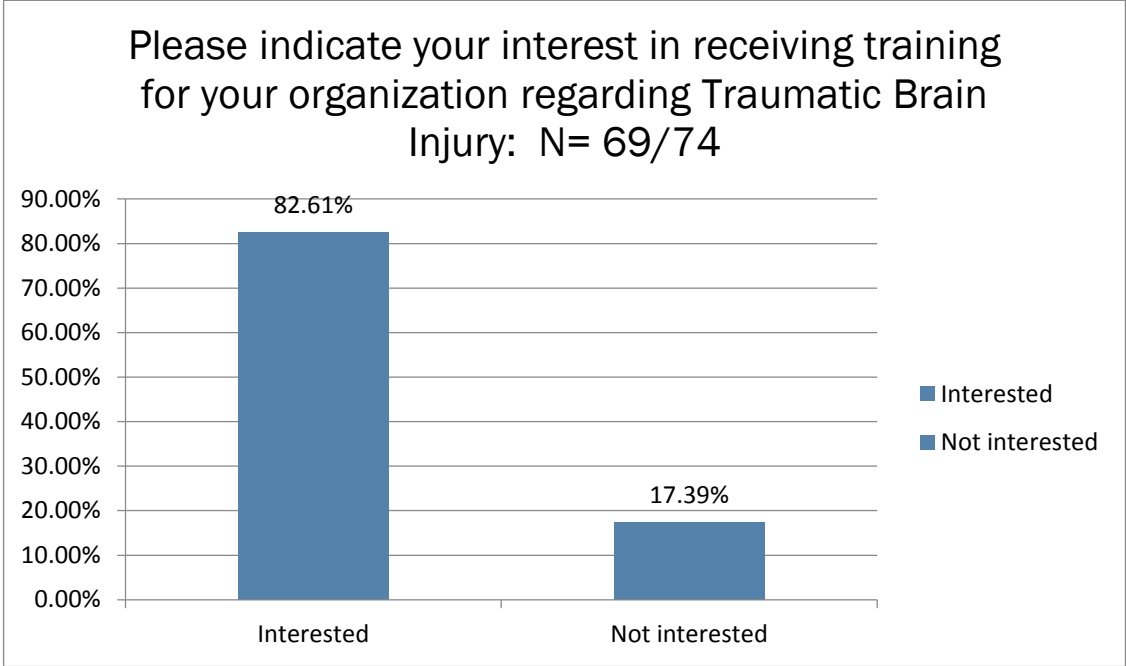
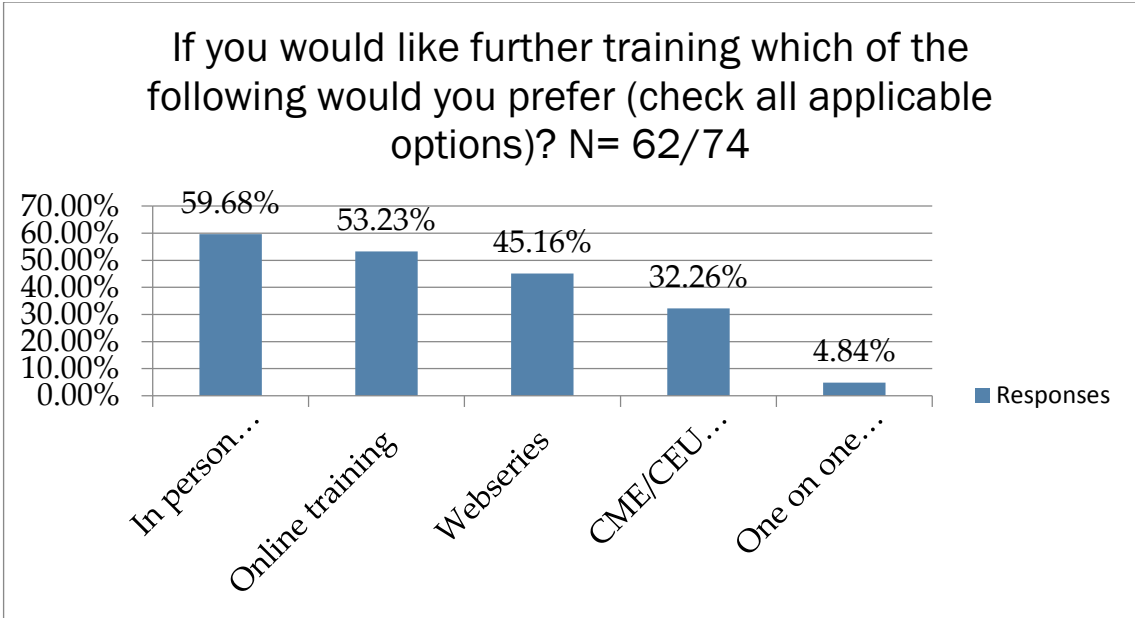


Figure 5 Method of Training



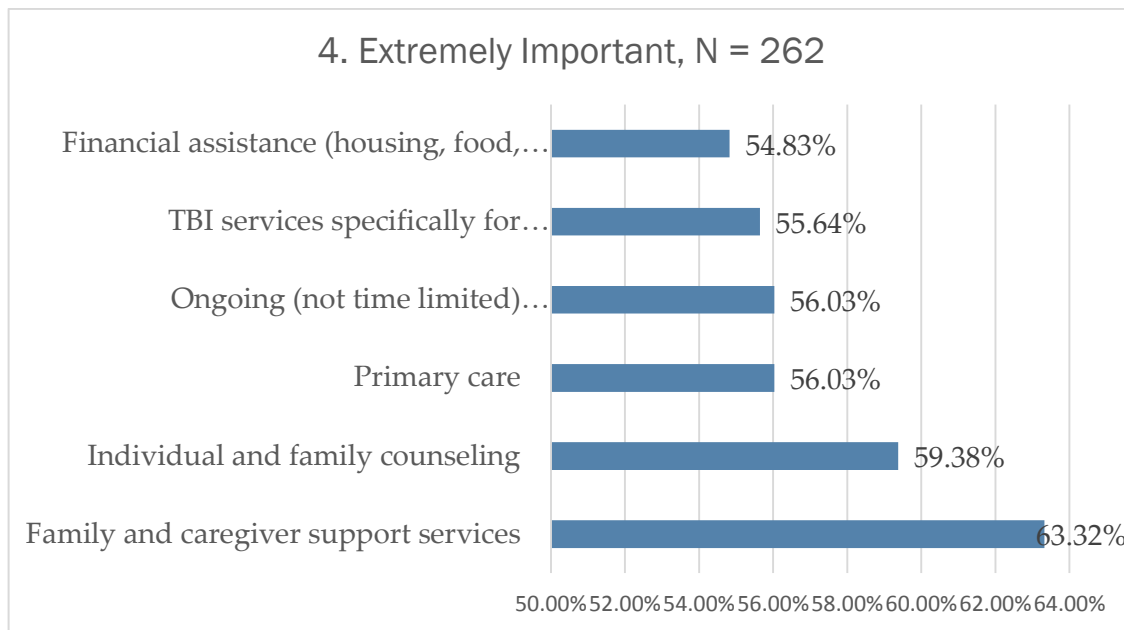
## Priority Area Two: Resource Development

Resource development means there are funds to hire people to deliver the services that are needed for the individual and their family. For example, an individual may want to educate him or herself about the injury. Families and friends that provide care also need to understand how to support the individuals. Subsequently, there are many ways this education can be communicated: on a website or social media page with accurate information; in-person by a health care professional or one of the traumatic brain injury providers; and in the form of a tool or written fact sheet. This focus area will include objectives and strategies to fill resource gaps that are identified by enhanced surveillance and needs assessment of the estimated 10,000 Vermonters with a traumatic brain injury.

**By the end of the 4-year plan Vermonters will see the following changes.**

Outcome 1: Increase availability and quality of key supports needed, for a stable community-based system of services, for children and adults with all levels of severity of brain injury.

Figure 4 Ranked extremely important services for individuals with TBI (2018 Needs Assessment).

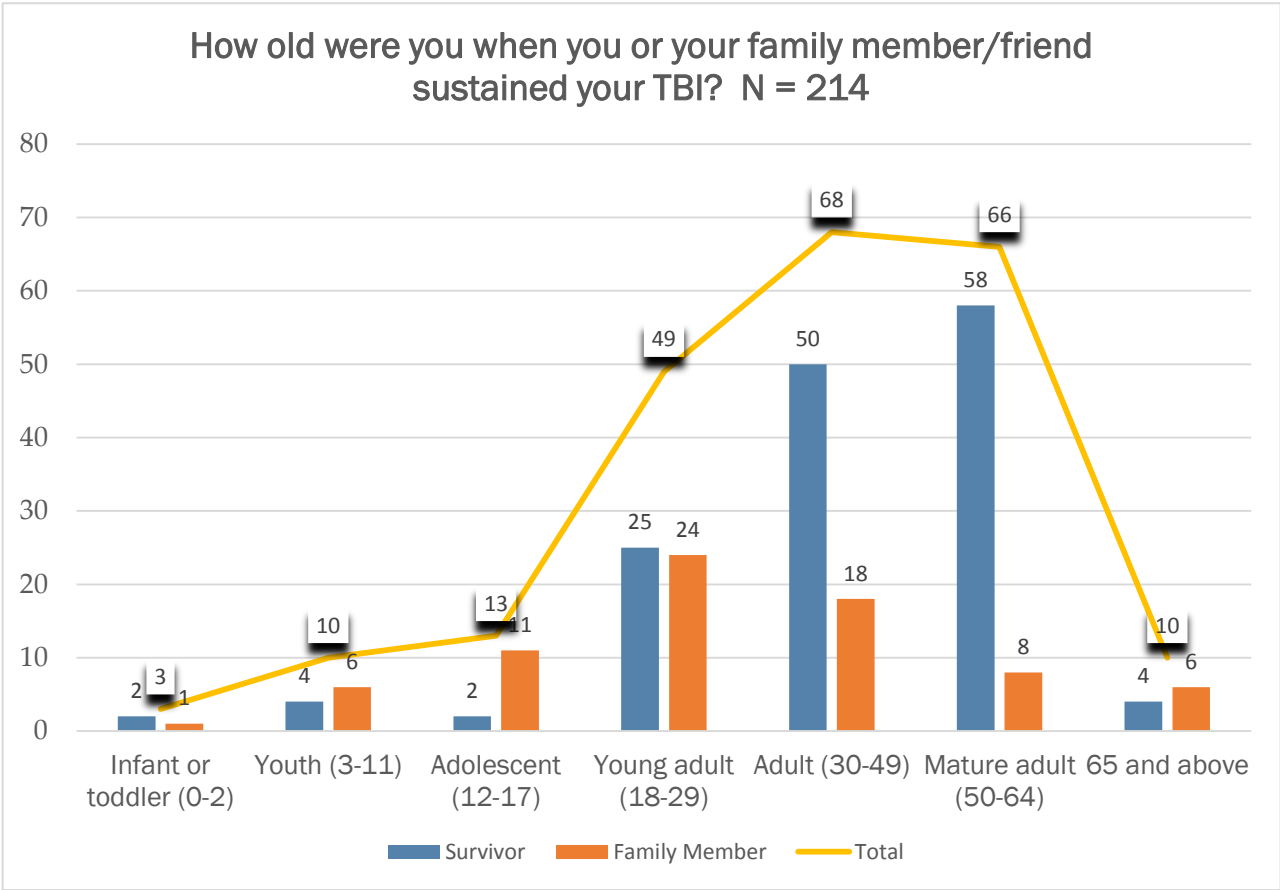


Outcome 2: Incidence and prevalence data informs plans for services and supports. The [Injury and Violence In Vermont July 2018](#) reports on many areas including the traumatic brain injury rates based on 2010- 2014 hospitalization and emergency room visits. Rational: Enhanced surveillance will quantify where resources can help Vermonters and how much supports and services (resources) are needed. The Department of Health and DAHL have had preliminary discussions about a registry and adding questions to the Behavioral Risk Factors

Surveillance System as improvements. Currently, the needs assessment gathers qualitative information about living with a brain injury.

*“At this point, with all of the options coming & going over the last 10+ years - It would be nice to know that I have housing, food, monies in my pocket & medical care. It is sometimes scary to go to sleep & not knowing. Just, 5 years ago, that was not such a worry. Now, it is. That is not okay,” (survivor comment, 2018 Needs Assessment Survey).*

Figure 5 Age of Injury (2018 Needs Assessment)



## Focus Area Three: Services

Services mean the coordination and service delivery of supports and direct services for the individual who has experienced a brain injury. Services are different than the other focus areas because there is a level of expertise and quality assurances. For example, an individual with a traumatic brain injury is looking for care and individualized supports for the severity and chronic nature of the injury. Any individual with a brain injury expects access to care, delivery of quality care, which is timely and adequate, coordinated and individualized. Services also connect back the other focus areas. In order to have timely care, early identification and screening of individuals with brain injury symptoms is paramount. Education about what to expect from the injury helps the individual and caregiver, with the provider's guidance, identify goals and the services/supports to meet those goals. Resources need to be available to make recommendations and referrals to survivors, family and friends and other caregivers. See Figure 7, for an example of a typical process of brain injury care delivery ([Standards for Post-Concussion Care](#), Ontario, June 2017) as an example.

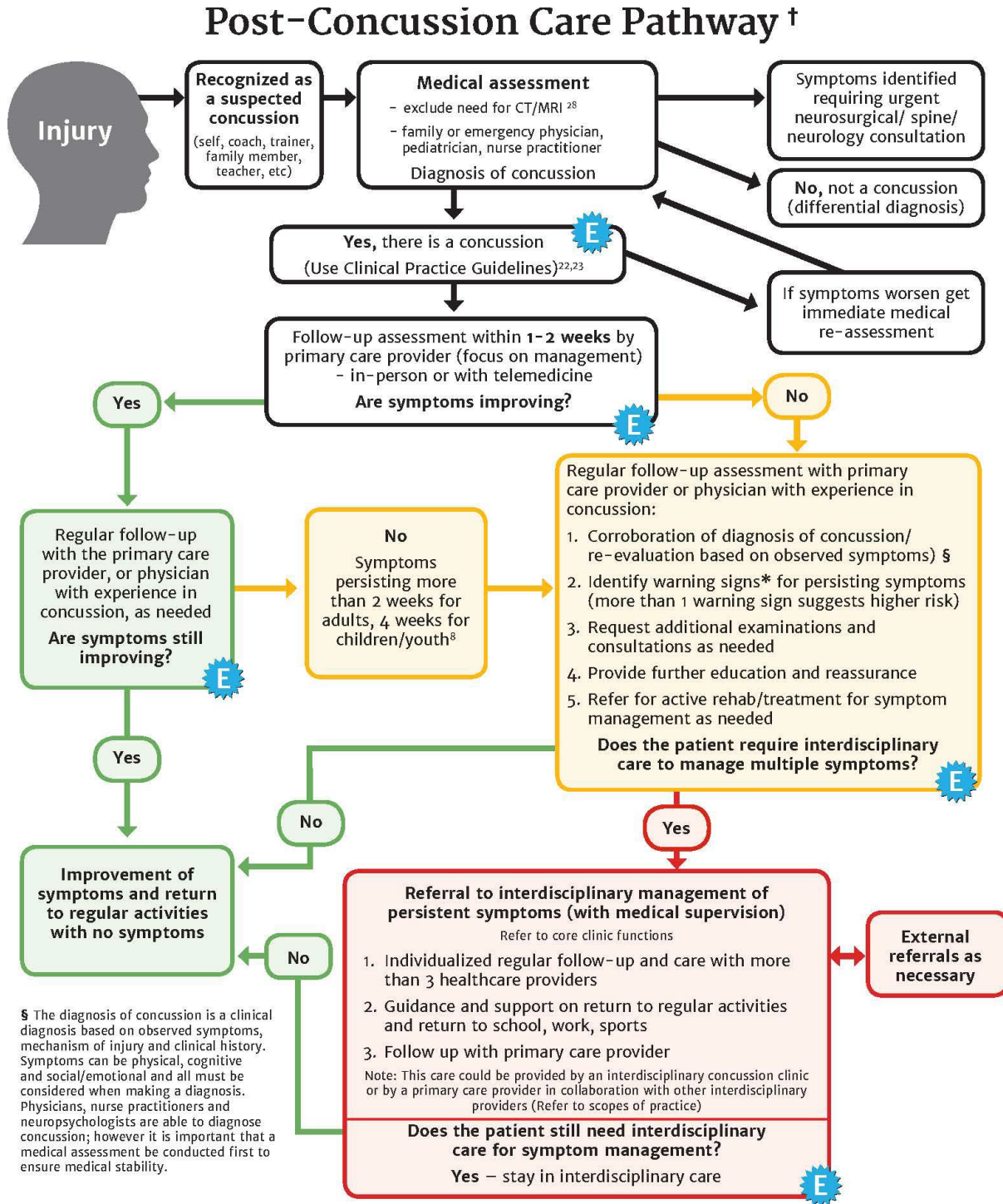
**By the end of the 4-year plan Vermonters will see the following changes.**

Outcome 1: Increase access to accurate, consistent brain injury information, referral and assistance, to obtain timely, appropriate services and supports for individuals with brain injury and their families. Rationale: There were 180 written comments about, "What you would like the people who plan statewide services and supports to know"? The general themes from these comments are:

1. More education for everyone that include providers in the health care system that someone may access at the time of their injury
2. More resources like case management or an advocate, support groups, payment support and alternative treatments
3. Better communication and setting realistic expectations after the injury and
4. Early availability to services (e.g., reduced wait times, standard protocols and practices).

Outcome 2: Increase access to comprehensive and coordinated services for children and adults with all levels of severity of brain injury. Rationale: The greatest dissatisfaction among the survivors and caregivers responding to the 2018 Needs Assessment are services that require community and state level coordination. These included ongoing (not time limited) support/assistance; help with maintaining housing; family and caregiver support; neuropsychiatric assessment; TBI services specific to the aging population (>50 yrs. of age); and neuropsychological evaluation.

Figure 7 Post Concussion Flow Chart



**Legend:**

- E Provide education (written and verbal), and where appropriate, reassurance
- Patient has risk factors identified, or is experiencing persistent symptoms that aren't resolving and require specialized care
- Warning sign that, while the patient was expected to recover, there is some persistence of symptoms that may need specialized care
- Patient is improving towards recovery
- Research suggests about 15%–20% of patients will take this pathway
- Research suggests about 30% of patients will take this pathway
- Research suggests about 55% of patients will take this pathway

# 2019 – 2022 Vermont State Brain Injury Strategic Plan

*Under development - template*

<i>Focus Area</i>	<i>Goal</i>	<i>SMART Objective</i>	<i>Strategy</i>	<i>Indicator Measured</i>
<i>Early Identification and Education</i>				
<i>Resource Development</i>				
<i>Services</i>				



## Acknowledgement

We want to thank the Vermont Brain Injury Advisory Board (VTBIB) and their on-going support as the strategic plan is refined, implemented and evaluated. The State appreciates the effort and hard work that the members of the State Plan Work Group, a subcommittee to the VTBIB, put into the planning process, too. The advice and experiences of the members of the two committees will help Vermonters with acquired brain injury and their families, friends or other caregivers improve access to the services and supports that leads to the best outcomes.

### Members of the Vermont Traumatic Brain Injury Board (VTTBIB)

#	Name	Representation
1	Trevor Squirrell	Brain Injury Assoc. of VT
	Jess Leal	Brain Injury Assoc. of VT, Ex- Officio
	Barb Winters	Brain Injury Assoc. of VT, Ex-Officio <sup>3</sup>
2	Camille George	DAIL
	Megan Tierney-Ward	DAIL
	Monica Hutt	DAIL
	Andre Courcelle	DAIL, Ex-Officio
	Sara Lane	DAIL, Ex-Officio
	Sharon Norton	Dept. for Children and Families
4	Annie Ramniceanu	Dept. Of Corrections
	Heidi Fox	Dept. of Corrections
	Jacqueline Rose	Dept. of Corrections
5	Tanya Wells	Dept. of Health
6	Frank Reed	Dept. of Mental Health
7	Charles Becker	Vermont Legal Aid – Disabilities Law Project
8	Eric Paige	Provider – Green Mountain Support Services
9	Matthew Gammons, MD	Provider – Rutland Regional Medical Center
10	Bryan Dague	Provider – University of Vermont
11	Emily Harvey	Public
12	Alisha Guillford	Public
13	Becky Hale	Public
14	Bill Morgan	Public
15	Bobby Surott-Kimberly	Public/ Veterans Hospital Vermont
16	Calla Papademas	Public
17	Cheryl Van-Epps	Public
18	Deborah Black	Public
19	Isaura Izquierdo	Public
20	Jane Hulstrunk	Public

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<sup>3</sup> May serve as designee for an organization.

#	Name	Representation
21	Kevin Burke	Public
22	Lorraine Wargo	Public
23	Marsha Bancroft	Public/Disabilities Rights Vermont
24	Natalie Kelly	Public
25	Pam McCarthy	Vermont Family Network
26	Robert Burke	Veterans Affairs
27	Sue Zamencnik	Vocational Rehabilitation

### Members of the State Plan Work Group

#	Name	Organization
1	Jess Leal	Brain Injury Association of Vermont
2	Andre Courcelle	DAIL
	Sara Lane	DAIL
	Sheri Lynn	DAIL
3	Jacq Rose	Dept. of Corrections & VTTBIB
4	Tanya Wells	Dept. of Health & VTTBIB
5	Frank Read	Dept. of Mental Health & VTTBIB
6	Eric Paige	Green Mountain Support Services & VTTBIB
7	Diana Lamson	Public
8	Charles Becker	Vermont Legal Aid
9	Sue Zamecnik	Vocational Rehabilitation
10	Alicia Guilford	VTTBIB
11	Bobbie Surott Kimberly	VTTBIB
12	Calla Papademas	VTTBIB
13	Cheryl Van Epps	VTTBIB
14	Isaura Izquierdo	VTTBIB

## Appendix – Needs Assessment and Data Sources

The State Plan Work Group for brain injury met twice in 2019. The primary purpose of the meeting was to review the results of the 2018 needs assessment survey. The survey questions targeted three groups to collect their views:

- Survivors (individuals with a traumatic brain injury)
- Families or friends of a survivor and
- Providers of services for individuals with brain injury.

The work group looked at the overall results of the 25 questions from demographic information to satisfaction with access and quality of services. To obtain a narrated record with slides on the data results please go to the Traumatic Brain Injury website.

Besides these results, there were 180 comments about, “What additional comments or ideas would you like the people who plan statewide services and supports know”? The general themes from these comments included a desire for:

1. More education for everyone including all providers in the health care system that someone may access
2. More resources such as case management or advocate, support groups, payment and alternative treatments
3. Understanding the process by better communication and setting realistic expectations after the injury and
4. Early availability to services like reduced wait times, standard protocols and practices.

The survey results and comments from 289 individuals do not represent Vermont’s population of individuals that experienced a brain injury for two reasons. First, the responses cannot be unduplicated. Second, the assessment results have limited demographics/characteristics about people who have had a traumatic brain injury. The work group deferred to the 2010 – 2014 Data Brief on Traumatic Brain Injury from the Department of Health for a representation of injury and death from brain injury. The work group agreed to a broader definition of brain injury in place of traumatic brain injury.

There are three other reports the work group will review in future meetings and may be helpful in developing ways to measure progress towards goals in the plan.

1. [Youth Risk Behavior Survey](#) (2017, pages 38-40)
2. [School Traumatic Brain Injury Report 2018](#)

3. [The Injury and Violence in Vermont](#) (2018, pages 15- 22, 43) that include the injury hospitalizations and emergency room and injury deaths by intent and cause.

May 18, 2019 – Brain injury Association of Vermont, annual Walk and Roll event to raise awareness of brain injury. Montpelier, Vermont, Statehouse steps.



# Appendix D Traumatic Brain Injury (TBI)– Data Brief

## Vermont Vital Statistics & Hospital Discharge Data

### Background

Traumatic Brain Injury (TBI) is caused by a bump, blow, jolt, or penetrating head injury that disrupts the normal function of the brain<sup>1</sup>. TBI has multiple causes (including firearms, motor vehicle traffic, falls, etc.) and multiple descriptions (including: open head wound, fracture of skull and facial bones, etc.). The severity of TBIs are difficult to determine in surveillance definitions. This data brief examines all causes, including contributing causes, of death related to TBI.

### TBI Mortality

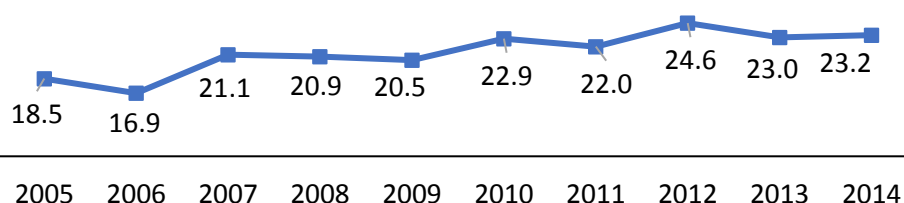
#### Primary Cause of TBI Death

Of the 815 TBI-related deaths from 2010-2014, all had a cause other than TBI listed as the primary cause of death. Of these, a third (35%) were due to firearms, three in ten (31%) were due to falls, and a quarter (24%) were due to motor vehicle traffic crashes. The remainder (10%) were made up of a variety of causes, each less than 2%, including drowning, machinery and being struck.

#### Trend

The rate of TBI related deaths among Vermont residents increased from 18.5 per 100,000 people in 2005 to 23.2 per 100,000 people in 2014. This increase was not statistically significant.

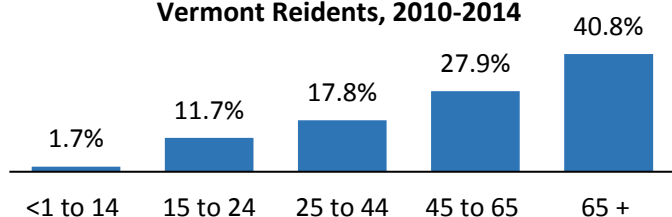
TBI- related Deaths rate among Vermont Residents, 2010-2014



#### TBI Mortality Intent

More than six in ten (62%) of TBI-related deaths were unintentional. About four in ten (38%) were intentional (34% suicide, and 3% homicide), and 1% was of undetermined intent. About 50% of deaths in all age groups are unintentional, the exception being those 65+ where nearly 80% are unintentional. Additionally, among those <1-14, 30% of TBI related deaths are the result of suicides.

Age Distribution of TBI-related Deaths among Vermont Residents, 2010-2014



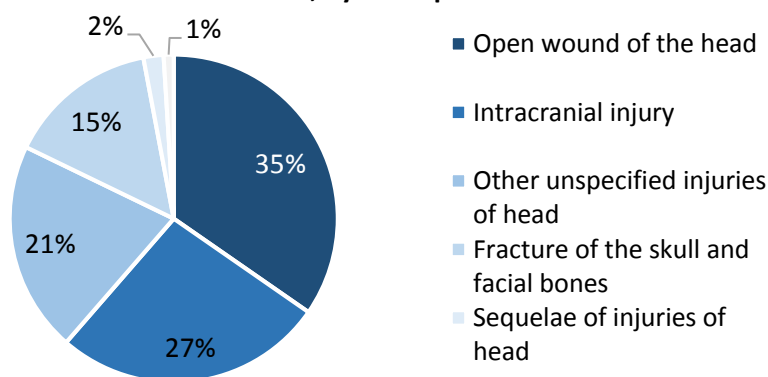
#### Sex & Age

From 2010-2014, three quarters (73%) of TBI-related deaths were among men compared to 27% among women. As age increases so does the likelihood of dying from a TBI-related cause. The highest percentage of TBI-related deaths were among those over the age of 65 (41%) and the lowest were among those under 15 years of age (2%).

#### TBI Mortality by Description

Over a third (35%) of TBI-related deaths were due to an open wound of the head, while about a quarter (27%) were due to intracranial injury. Two in ten (21%) resulted from unspecified injuries of the head (unspecified injuries of the face, ear or nose and injuries classifiable to more than one of the other descriptions) and 15% were due to fracture of skull and facial bones. Few were due to other TBI.

TBI-related deaths, by description 2010-2014



<sup>1</sup> Basic Information about Traumatic Brain Injury and Concussion. CDC. <https://www.cdc.gov/traumaticbraininjury/basics.html>

## TBI Morbidity

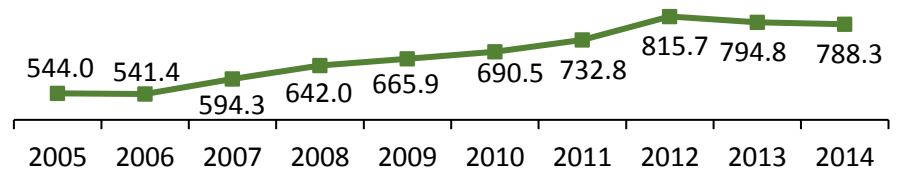
### Primary Cause of TBI Morbidity

From 2010-2014, nearly all (96%) TBI hospitalizations and ED visits also have an injury listed. Of these, 54% were due to falls, 22% were due to being struck by/against, 12% were due to motor vehicle traffic accidents, and 12% were related to some other type of injury.

### Trend

The rate of TBI related deaths among Vermont residents at Vermont hospitals increased significantly from 544.0 per 100,000 people in 2005 to 788.3 per 100,000 people in 2014.

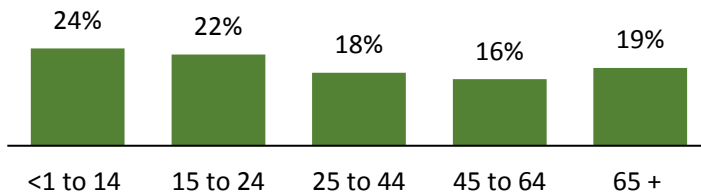
**TBI-related Hospitalizations & ED Visit rate  
VT Residents at VT Hospitals, 2010-2014**



### TBI Morbidity Intent

From 2010-2014, more than nine in ten (94%) of TBI-related Hospitalizations and ED Visits were unintentional. Six percent were intentional (<1% self-harm, and 6% assault).

**Age Distribution of TBI-related  
Hospitalizations and ED Visits  
VT Residents at VT Hospitals, 2010-2014**



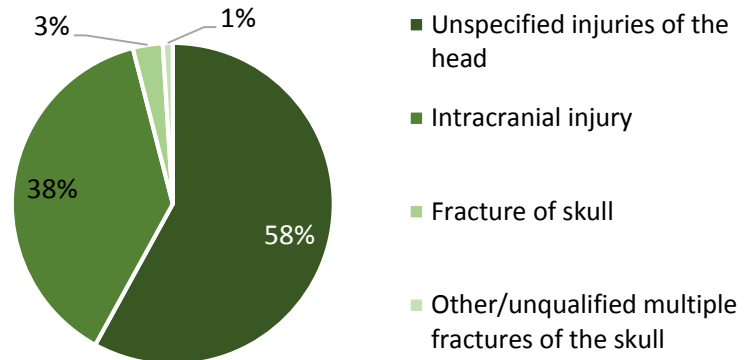
### Sex & Age

More than half (52%) of TBI-related hospitalizations and ED visits were among men, with 48% among women. TBI-related hospitalizations and ED visits were highest among those under age 15 (24%). The proportion decreases significantly through age 64, before increasing among those 65 and older (19%).

### TBI Morbidity by Description

Nearly six in ten (58%) TBI-related hospitalizations and ED visits were due to unspecified injuries of the head. About four in ten (38%) were due to intracranial injuries, including concussion, contusion, laceration and hemorrhage. Few, less than five percent were due to fractures of skull (3%), other/unqualified multiple fractures of the skull (1%), shaken baby syndrome (<1%), and injuries to the optic nerve and pathways (<1%).<sup>2</sup>

**TBI-related Hospitalization/ED Visits  
by description 2010-2014**



## Summary

The cause of the decrease in TBI-related deaths and increase in hospitalizations/ED visits is unclear, however, this pattern is similar to the US<sup>3</sup>. Decreases in fatal motor vehicle traffic crashes, increases in fall-related deaths<sup>4</sup>, as well as increased awareness around TBI injuries are all possible factors in the changes to the morbidity and mortality trends<sup>5</sup>.

For more information on injury, please contact Leslie Barnard, MPH, [leslie.barnard@vermont.gov](mailto:leslie.barnard@vermont.gov).

<sup>2</sup> This analysis is of the first listed cause of TBI. Few (224) people had multiple causes listed.

<sup>3</sup> Rates of TBI-related Emergency Department Visits, Hospitalizations, and Deaths — United States, 2001–2010. CDC. <https://www.cdc.gov/traumaticbraininjury/data/rates.html>

<sup>4</sup> [http://www.healthvermont.gov/sites/default/files/documents/2017/02/HSVR\\_Injury\\_Mortality.pdf](http://www.healthvermont.gov/sites/default/files/documents/2017/02/HSVR_Injury_Mortality.pdf)

<sup>5</sup> [https://www.cdc.gov/mmwr/volumes/66/ss/ss6609a1.htm?s\\_cid=ss6609a1\\_w](https://www.cdc.gov/mmwr/volumes/66/ss/ss6609a1.htm?s_cid=ss6609a1_w)