

The Fetal Alcohol Resource Program: Analysis of Supports Provided to Individuals and Families Impacted by FASD

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ABSTRACT

Fetal Alcohol Spectrum Disorder (FASD) is a diagnostic term used to describe the various impacts on the brain and body of individuals prenatally exposed to alcohol. Being that FASD is an incredibly complex lifelong disability – with individuals requiring a variety of different supports and services throughout their lifetime – there is a need for analysis into the supports provided to individuals and families impacted by FASD. The purpose of this study was to identify the type and frequency of Fetal Alcohol Resource Program (FARP) – a program offered through ABLE2, a non-profit community-based organization serving the Ottawa region which aims to connect individuals and families impacted by FASD with existing services and supports within their community – services requested by clients. Following organization of data from FARP’s electronic data capture system into three separate age groups (children 12 and under, youth 13-17 years, and adults 18 and over), the nature of each individual contact over a 2-year period was analyzed and categorized as one of the following: family, crisis, diagnosis, education, mental health, addiction, resources/referrals, and justice. The frequency of contact subjects was then analyzed using Prism. The data indicated that, over all age groups, requests for resources/referrals were most common. Interestingly, while service needs differed between individuals in different age groups, the distribution of categories remained consistent. The findings of this study suggest that, while the general types of supports requested by individuals and families impacted by FASD remained consistent over age groups, there is an ongoing, but evolving, need for support.

INTRODUCTION

Fetal Alcohol Spectrum Disorder (FASD) is a diagnostic term used to describe the various impacts on the brain and body of individuals prenatally exposed to alcohol. FASD is a lifelong disability and individuals often experience challenges in various aspects of their lives, requiring support in different ways. As a spectrum disorder, manifestation of FASD varies between individuals, thus each person affected will have their own challenges and strengths; common challenges include deficits in motor skills, memory, attention, executive function, academic achievement, and neuroanatomical differences¹.

Despite being one of the most prevalent neurodevelopmental disorders in Canada – with an estimated prevalence of 4% on a national level, translating to more than 1.5 million Canadians² – individuals impacted by FASD remain under-recognized and under-serviced. FASD, being a lifelong disability, has no known cure; however, evidence shows that early supports can positively impact outcomes for individuals with FASD³. Support for individuals impacted by FASD varies greatly depending on the specific challenges faced by the individual, however, common areas of support include intake and adoption, education, mental health, and justice.

Intake and adoption are a commonly requested area of support by those impacted by FASD. Global estimates show that between 60-80% of children with FASD grow up in foster or institutional care settings⁴; at times, children are removed from their initial homes due to parental substance abuse. In Canada specifically, researchers estimate a minimum prevalence of FASD among Canadian children in foster care of 3-11%⁵. The estimated prevalence is conservative, largely because it is thought that most children with a history of prenatal alcohol exposure in foster care do not receive a formal diagnosis. While studies suggest that children with FASD in foster care often have positive outcomes, it is vital that they remain in a stable, long-term foster home

and receive the support that they need from their foster family and community; however, due to common behavioural traits exhibited by children with FASD – such as impulsivity and aggression – long-term placements are often difficult to achieve, and it may be difficult for the children to form strong relationships with their foster family and community. As a result, support regarding foster homes is frequently requested by families impacted by FASD.

Educational supports are commonly requested by individuals impacted by FASD; this can particularly be attributed to the fact that many children require special education supports, as individuals with FASD may experience challenges with academic achievement in the traditional classroom setting⁶. As children with FASD experience a wide variety of challenges, which translate to their academic experience in various ways, it is essential that educators of young children are aware of the ways to best support children with such needs.

Mental health supports and services are perhaps the most requested by individuals impacted by FASD, studies show that up to 90% of individuals diagnosed with FASD are also diagnosed with psychiatric comorbidities, and require mental health services throughout their lifetime⁷. Furthermore, the common behavioural manifestations of FASD, in conjunction with the frequency of psychiatric comorbidities, tendency for unstable households, and lack of community support due to stigma and lack of FASD awareness, often contribute to individuals with FASD being at higher risk for substance abuse and suicide in comparison to the general population⁸. Studies show that early access to supports and services can substantially improve the likelihood of good outcomes for children with FASD, which is particularly true for mental health services⁹.

Due to many of the above-mentioned behavioural manifestations of FASD, it has been found that individuals with FASD are at higher risk than the general population to encounter troubles with the law. In addition to the aforementioned behavioural manifestations of impulsivity and

aggression, children with FASD also exhibit increased vulnerability to negative influences due to the often-unstable environments of foster homes, as well as the social isolation they often experience in schools and communities³. For example, a study based in Manitoba, Canada, reported that, in a medium-security federal penitentiary, a minimum of 10% of offenders had been diagnosed with FASD¹⁰. However, it is important to note that most crimes committed by youths impacted by FASD are impulsive and unplanned in nature, such as theft and shoplifting. Having access to proper supports can drastically improve the outcomes of children living with FASD, particularly within the legal system, emphasizing its importance.

There exist organizations that provide support for individuals and families impacted by FASD; one such non-profit community-based organization serving the Ottawa region, which aims to support people of all ages across the disability spectrum, is 'Ability Benevolence Liberty Empowered' (ABLE2). ABLE2's Fetal Alcohol Resource Program (FARP) is a program that aims to provide support to individuals and families impacted by FASD by connecting them with existing services and supports within their community and has been in operation since 2015. The goal of this study was to identify the type and frequency of FARP services requested by individuals and families impacted by FASD. The objectives of this project are to: a.) identify the type and frequency of FARP services requested by individuals and families impacted by FASD, and b.) use this information to formulate recommendations to FARP on the optimal allocation of resources to address the mental health and service needs of individuals and families impacted by FASD. Specifically, this study aims to: a.) determine the average number and range of contacts to FARP by individuals and families, b.) determine the frequency distribution of the specific reasons/requests for support by individuals and families contacting FARP, and c.) determine the distribution by age of the individual with FASD (child/youth/adult) contacting FARP and whether

the specific reasons/requests for support are associated with these age groups. It was hypothesized that (i) requests for mental health support by individuals and families impacted by FASD will be most frequent, and (ii) the service needs of individuals and families contacting FARP are influenced by the age of the individual with FASD; specifically, families of children most frequently request social support, youth most frequently request educational support, and adults most frequently request financial or career support.

METHODS

This study was conducted as part of a larger research program that is assessing the long-term impact of FARP and implementation of community-based support services for individuals with FASD and their families. The research program, funded by the Kids Brain Health Network, was approved by the Queen's University Health Sciences Research Ethics Board. In this study, data collected by ABLE2 on every individual contact (3211 contacts) to FARP over a 2-year period was organized and collated; statistical comparisons were performed to determine the type and frequency of service requests across the three identified age groups: children (12 and under), youth (12-17), and adults (over 18). As previously mentioned, FARP is a program offered by ABLE2 which aims to provide support for families impacted by FASD by connecting them with existing services within their community. While FARP offers a wide variety of supports, their five broad areas of support that are most requested by individuals and families are: intake and adoption, education, mental health, justice, as well as finance and career support. These specific areas of support, being most requested, are in line with the common challenges faced by individuals impacted by FASD as mentioned above.

Prior to examining the data collected by ABLE2, it is important to understand what role FARP plays and how they support families impacted by FASD. When an individual or a family needs support, they simply contact FARP and are put in contact with a specialist who can connect them with existing supports and services within their community. Because individuals with FASD experience a variety of challenges, which may also change over time, each contact between the individual and/or family with FARP may be for a different reason; as a result, the focus of this study was to analyze each individual contact. As mentioned previously, while there is no 'cure'

for FASD, early support has been shown to improve the likelihood for positive life outcomes of those with FASD.

The data supplied by ABLE2 on individual contacts provided the following information for each contact made: client number, first and last name of the individual, individual's age, language, consultant, city, start date of file, subject of contact, and a description of the contact. This information was used strictly for the purpose of statistical analyses and group comparisons, and no personal identifying information appears in this report. Working with FARP, the areas of supports and services provided by FARP were distilled down to eight for the purposes of this study: family, crisis, diagnosis, education, mental health, addiction, resources/referrals, and justice. First, under the subject of 'family' are all contacts made having to do with supporting the caregiver. Supports provided under 'family' may involve meeting with the entire family to suggest routine modifications or the development of goals to improve the likelihood of positive outcomes for families impacted by FASD. Second, contacts are categorized under the subject of 'crisis' if they are made in request for support during an urgent situation or were in dealing in crisis planning. Third, under the category of 'diagnosis' are contacts made requesting supports for receiving or processing of a FASD diagnosis. The process of receiving a FASD diagnosis can be incredibly difficult due to the complexity of the disability. Fourth, contacts are categorized under the subject of 'education' if they pertain to the individual's education, such as if the contact revolves around the development of special education programs in school, or the navigation of school services. Fifth, under the subject of 'mental health' are the contacts involving connecting individuals with mental health resources and services in their area. As mentioned, individuals impacted by FASD often have additional challenges specific to mental health; for example, FARP sees many cases having to do with individuals who struggle with anxiety, depression, and suicidal thought. As a

result, it is crucial that services such as FARP can connect individuals living with FASD with appropriate mental health services. Six, contacts were categorized under ‘addiction’ if they pertained to an individual’s struggles with substance use and addiction. Seven, any contacts made requesting for unspecified resources and referrals were categorized under ‘resources/referrals’, including but not limited to requests for other ABLE2 services, such as involvement in their mentorship programs or youth groups. Finally, under the subject of ‘justice’ are the contacts involving the legal system. The role of FARP in complex cases that may involve the law are often to inform of the feasibility of certain conditions, prevention work, or work with local juvenile detention centers to foster a successful environment.

As the information was provided in the form of an Excel spreadsheet, Excel was used as the initial tool to gain a general understanding of the data. After an initial analysis was performed, and the information was organized, the data was exported to Prism for more sophisticated analyses than are possible in Excel. The specific methods for each research objective were as follows:

a.) Determine average number/range of contacts to FARP

To determine the average number of contacts to FARP, the information was organized by last name and the number of appearances of each last name is counted as one contact. An average was taken, as well as a range, to determine how many times families contact FARP over a two-year period. Additionally, the number of contacts each individual make was determined, and the average was taken, as well as the range.

b.) Determine frequency distribution of reasons/requests

To determine the frequency distribution of reasons/requests of each contact, the information was organized by ‘subject’ of contact. The number of contacts under each

subject were noted, and the frequency of each subject was compared using One-way Analysis of Variance.

c.) Determine distribution by age of individuals contacting FARP

To determine the distribution by age of individuals contacting FARP, the information was organized to detail age and individual name. The list was distilled down to contain only each individual once, and the age of the individual was noted. This refined list was then used to determine the frequency distribution by age of the subject of contact by individuals that accessed FARP services. Specifically, the following age groups were examined: children (aged 12 and under), youth (12-17), and adults (over 18). These data were analyzed using Two-way Analysis of Variance with age as the between group variable and the contact 'subject' as the within group factor.

RESULTS

Determine type and frequency of reasons for contacting FARP

To determine the type and frequency of the specific reasons for support requests made by individuals and families impacted by FASD, the data collected by FARP over a 2-year period was organized and collated into three groups, based on the age of the individual with FASD: children (≤ 12 years), youth (13-17 years), and adults (≥ 18 years). Following this initial organization, a classification scheme was then created: (i) Family; (ii) Crisis; (iii) Diagnosis; (iv) Education; (v) Mental Health; (vi) Addiction; (vii) Resources/Referrals; and (viii) Justice. The results of classifying each contact based on the curated classification scheme is shown in Table 1, detailing the mean age of individuals within each age range, the mean number of contacts, as well as the distribution of contacts separated by category.

| | Children (≤ 12 years) <i>n</i> = 69 | Youth (13-17 years) <i>n</i> = 31 | Adults (≥ 18 years) <i>n</i> = 26 |
|---|---|---|---|
| Mean Age \pmSD (Range) | 8.0 \pm 2.9 (1-12) | 15.2 \pm 1.4 (13-17) | 21.6 \pm 5.3 (18-38) |
| Total Contacts | 1189 | 983 | 714 |
| Mean Contacts \pmSD (Range) | 17.2 \pm 25.7 (1-133) | 31.7 \pm 46.1 (1-203) | 27.5 \pm 26.1 (1-99) |
| Number of Contacts (%) | | | |
| Family | 207 (20.18%) | 176 (18.35%) | 101 (15.81%) |
| Crisis | 65 (6.34%) | 115 (11.99%) | 84 (13.15%) |
| Diagnosis | 73 (7.12%) | 15 (1.56%) | 12 (1.88%) |
| Education | 224 (21.83%) | 146 (15.22%) | 86 (13.46%) |
| Mental Health | 88 (8.58%) | 155 (16.16%) | 87 (13.62%) |
| Addiction | 0 (0%) | 0 (0%) | 12 (1.88%) |
| Resources | 363 (35.38%) | 346 (36.08%) | 220 (34.43%) |
| Justice | 6 (0.58%) | 6 (0.63%) | 37 (5.79%) |

Table 1. Breakdown of FARP data on a basis of age and category of reason for contact.

Due to the high variance in number of contacts made by individuals and families impacted by FASD, further demonstrated by the high standard of deviation in mean contacts (Table 1), a

violin plot was created to aid in the visualization of the distribution of contacts (Figure 1). From Figure 1, it can be seen that, although ranges of contacts were high within age groups, most individuals contacted FARP only a handful of times, with mean contacts being 10.84, 16.70, and 24.60 in age groups of children, youth, and adults respectively, after removing outliers (Table 2). Overall, there was no statistical difference in the number of contacts made by individuals between different age groups ($P = 0.084$).

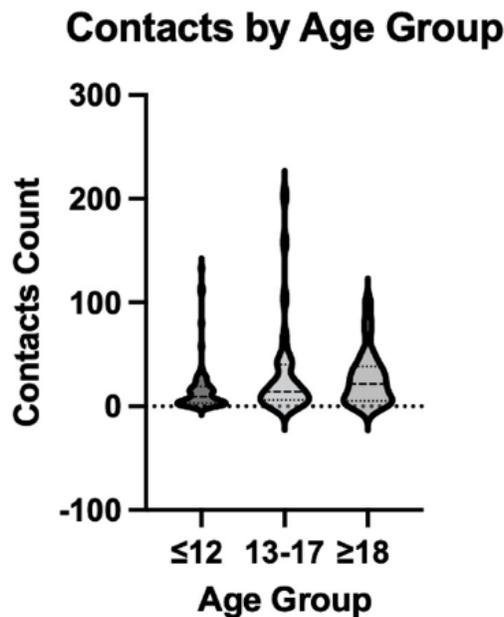


Figure 1. Violin plot displaying distribution of number of contacts as a function of age group. The distribution of number of contacts based on age range was displayed using a violin plot. Each age group is represented, children (≤ 12 years), youth (13-17 years), and adults (≥ 18 years). Data were analyzed via one-way ANOVA; no statistically significant differences between the age groups in number of contacts were observed ($P > 0.05$).

| | Children (≤ 12 years) $n = 69$ | Youth (13-17 years) $n = 31$ | Adults (≥ 18 years) $n = 26$ |
|---|--|------------------------------------|--|
| Total Contacts | 1189 | 983 | 714 |
| Mean Contacts \pmSD (Range) | 10.84 \pm 9.34 (1-36) | 16.70 \pm 15.04 (1-52) | 24.60 \pm 22.06 (1-83) |

Table 2. Mean number of contacts after removing outliers. Using the ROUT method ($Q = 1\%$), outliers were removed from each group. The following number of outliers were removed from the children, youth, and adults groups respectfully: 5, 4, and 1.

Compare the average number of contacts and reasons for contact based on age group

To compare the average number of contacts and the specific reasons for support requests made by individuals and families impacted by FASD to FARP, as a function of the individual with FASD's age, pie charts were generated using the data displayed in Table 1 (Figure 2).

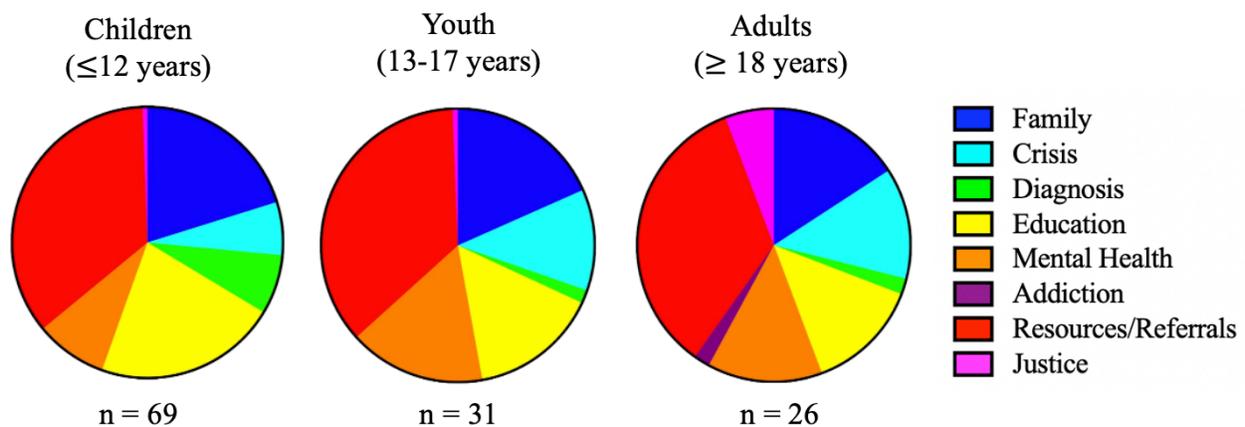


Figure 2. Collection of pie charts displaying the percentage distributions of reasons for contact, separated by age. The following colours were used to represent each category: Family (blue), Crisis (cyan), Diagnosis (green), Education (yellow), Mental Health (orange), Addiction (purple), Resources/Referrals (red), and Justice (pink). The number of individuals included in each group was displayed below each pie chart. Each pie chart represents the distribution of contact reason based on age group, children (≤ 12 years), youth (13-17 years), and adults (≥ 18 years). Data were analyzed via one-way ANOVA; no statistically significant differences between the percentage distribution between age groups were observed ($P > 0.05$).

The order in most to least utilized service category for each age group can be seen in both Table 1 and Figure 2. For children (≤ 12 years), the most to least requested service categories were Resources/Referrals, Education, Family, Mental Health, Diagnosis, Crisis, Justice, and Addiction. For youth (13-17 years), the most to least requested service categories were Resources/Referrals, Family, Mental Health, Education, Crisis, Diagnosis, Justice, and Addiction. Finally, for adults (≥ 18 years), the most to least requested service categories were Resources/Referrals, Family, Mental Health, Education, Crisis, Justice, Diagnosis, and Addiction. Note that Addiction support services were not requested by individuals in age groups of children (≤ 12 years) and youth (13-17 years), while there were equal numbers of service requests for Diagnosis and Addictions

services by individuals in the adults (≥ 18 years) group. Overall, there was no statistical difference in the percentage distribution of reasons for contacts between age groups ($P = >0.999$).

DISCUSSION

FASD is an incredibly complex lifelong disability, with individuals requiring varying types of supports throughout their lives. Based on this, the focus of this study surrounded two fundamental questions: what type of FARP service requests are being made by individuals and families impacted by FASD and do these service needs change over an individual's lifetime? To answer these questions, individuals were assigned to one of three age categories, and the nature of each contact was distilled down to one of eight topical categories: family, crisis, diagnosis, education, mental health, addiction, resources/referrals, and justice. It was hypothesized that, although service needs of individuals and families contacting FARP would be influenced by the age of the individual with FASD, mental health support would be the most frequently requested. While it was seen that service needs did differ between individuals in different age groups, although the categories remained rather constant, mental health support services were not the most requested.

Mental health services were not the most requested in each age group

In all three age groups, the most requested services were for resources and referrals, followed by educational service supports in the '12 and under' age group, and family supports for the '13-17' and '18 and over' age groups. Resources and referrals being the most widely requested amongst all three age groups is not necessarily the most surprisingly, given that FARP's goal is primarily to connect individuals with existing services and supports within their area. It would be interesting to further breakdown the specific types of resource/referral requests being made. A few examples of resource and referral requests made in each age group are as follows. For children 12

and under, common resource requests included requests for childcare services, such as seeking the help of FASD informed, affordable childcare services in the family's area. For youth 13-17 years of age, common resource requests involved seeking age-appropriate youth groups to promote social interaction. Finally, in adults 18 and over, common resource requests included seeking FASD adult support services.

While mental health support services were not the most consistently requested amongst each age group, it is important to consider that mental health concerns can manifest in different ways, and although requests may not have been made for mental health supports specifically, requests can inadvertently provide such supports. For example, as mentioned, many resource requests for youth were for age-appropriate youth groups to promote social interaction and community integration. There is a key mental health component embedded within this request. Due to common behavioural manifestations of FASD, including impulsivity, aggression, and general difficulties with reading social cues, children with FASD frequently experience isolation and are dismissed for their behaviour, and are thus often socially isolated from their peers⁶. This social isolation, compounded with the tendency for unstable households and lack of community support that individual with FASD experience, individuals with FASD are vulnerable to developing mental health disorders throughout their lifetime, with 90% of individuals being diagnosed during their lifetime⁹. Thus, requests for youth groups can play a role in the individual's mental health, with participating in these youth groups possibly benefiting the individual's mental health in the long-term.

Overall, while mental health services were not directly the most requested in each age group, many of the service requests – such as requests for resources and referrals – may invertedly provide mental health supports.

Service needs differed between individuals in different age groups, but the distribution of categories remained rather consistent

As mentioned, the service needs of individuals in different age groups did vary; however, the distribution of categories remained rather consistent. While the most requested services were for resources/referrals, education, and family supports in children (12 and under), for individuals in both the youth (13-17 years) and adults (18 and over) groups, the top three most requested service categories were Resources/Referrals, Family, followed by Mental Health. The distinct overlap in most frequently requested service needs can incorrectly lead to the assumption that service needs of those with FASD do not change over time; however, upon further examination, the detailed nature of these requests change drastically.

Using the category of ‘family’ as an example, the service requests differ significantly between the age groups. In the ‘12 and under’ group, many service requests dealt with adoption and integration into foster families. For example, one case follows the needs of a 10-year-old child, whose numerous service requests under ‘family’ related to her adjustment with her new adoptive family, after having experienced extensive trauma with her biological family. FARP, under ‘family’ services, worked to develop plans to aid in the adoptive family’s navigation of welcoming a second child with FASD into their home, and balancing the needs of their adoptive son, who also has FASD, with the needs of the new child. This use of FARP’s ‘family’ support services for children (12 and under) is unsurprising and adheres to literature, considering that approximately 60-80% of children with FASD grow up in the foster care system⁴. The importance of promoting strong bonds between the child and their foster/adoptive family has been shown to be important in increasing the likelihood of long-term family stability, which can greatly improve the child’s outcomes⁴.

In youth (13-17 years), several cases dealt with the development of safety plans, and aiding in the navigation of behaviours that had been labelled as ‘deviant’ by the youth’s school, family, and/or community in general. For example, one case involved a youth who had been suspended from school due to the use of threatening language, specifically involving communicating their desire to physically harm their classmates. Following this incident, the adoptive parents of the youth reached out to FARP, requesting aid in developing a safety plan and how to best support their child in navigating such behaviour, as the youth did not have actual desires to harm others. FARP worked out a plan which involved storing away objects that could enable the youth to inflict harm, such as knives, and communicating with the school to modify the curriculum to alert the family of when violent/dark topics would be taught, as to better prepare the family. This type of service is an important component of FARP’s support, as youth with FASD tend to be impulsive and behaviours can often manifest as aggression, even in the absence of malice. This further relates to how behavioural features of individuals with FASD often increase their vulnerability to negative influences and increase their risk of being involved with the justice system, with most crimes committed by youth impacted by FASD being impulsive in nature, such as theft and shoplifting. Early intervention of this form, especially aiding in navigation of FASD associated behaviours that are often labelled as ‘deviant’ or even criminal, can be crucial to increasing the chances of positive outcomes for individuals with FASD.³ The importance of early behavioural and justice related intervention is further emphasized by how commonly individuals with FASD become involved with the justice system in their lifetime. In Canada, the total annual cost associated with FASD amounted to \$1.8 billion in 2012, with the largest contributor being cost of productivity lost, followed closely by the cost of corrections and justice (accounting for approximately \$378.3 million)¹¹. Not to mention, studies within penitentiaries across Canada show high prevalence of

inmates with FASD; a study conducted in British Columbia reported a FASD prevalence of approximately 11%, however, it is thought that the actual prevalence is likely significantly higher, with many individuals going undiagnosed³. Overall, early support for youth with FASD can help to decrease their chances of ending up in the justice system, overall helping to improve their likelihoods of positive outcomes, making such FARP services valuable to communities.

In adults (18 and over), common requests for ‘family’ supports and services typically surrounded one of two topics: either aid in navigating adult relationships and family dynamics, or support in transitioning from a dependent to an independent living situation. Both uses of such services are consistent with literature. Studies show that adults (21-51 years) with FASD typically experience mental health problems, trouble with the law, and issues with drug and alcohol abuse¹². Furthermore, behavioural, and cognitive features such as aggression, irritability, deficits in executive function, and more, commonly impact adults in their everyday function and ability to live independently. In addition, adults with FASD typically struggle to maintain consistent employment, further impacting their living situation. In a study of adults with FASD, it was found that only 13% of individuals had held ‘ordinary’ employment, although approximately 70% of participants had completed preparatory job training¹³. It was also found that over 60% of participants were in dependent-living settings, with only 16% of participants living with a partner or a family of their own. Overall, the way that adults (18 and over) typically used FARP’s ‘family’ services and supports is consistent with literature, as it typically pertained to the navigation of adult relationships, family dynamics, and the transition from dependent to independent living situations.

Overall, while the categories of service needs remained consistent between age groups, the actual service requests changed in nature, suggesting ongoing, but shifting, needs for support, as seen in literature.

Limitations

There were two major limitations to this study. Firstly, there exists inherent flaws to FARP's data capture system. Such flaws include the lack of consistency in categorization of contact topics and inconsistent levels of detail in contact descriptions. These limitations affected the study method, requiring the analysis of each individual contact for classification and categorization; however, due to the inconsistent levels of detail in contact descriptions, assumptions had to be made regarding the nature of certain contacts. Efforts were made to mitigate the negative impact on study rigor due to these limitations, such as communications with the FARP Program Manager, as well as the piecing together of several contacts under one individual to provide context to more ambiguous information.

Secondly, there were likely fewer contact points in the adults group (18 and over) for two reasons: the implementation of ABLE2's program 'A Good Life for Adults (18-39 years) with FASD', and the exclusion of ages for certain individuals due to privacy and confidentiality. First, according to FARP's Program Manager, a goal of the program was to focus on supporting children and youth in the region, rather than adults; this goal manifested in the development of the mentioned program for adults with FASD. It is possible that, because of this shift, FARP was less advertised to adults nearing the end of the provided data set. This may have resulted in fewer contacts from adults, in part explaining the discrepancy between the number of individuals in the children (12 and under) group, in comparison with the adult (18 and over) group. Second, within the data provided by FARP, several individuals (n = 52) had their ages removed, and whose contacts were therefore excluded from the data analysis. According to the Program Manager, most of these individuals had their ages removed due to issues with privacy and confidentiality, with most having accessed adult services. In considering that several of these individuals may have

been adults (18 and over), inclusion of their contacts may have resulted in different results from what was extracted. However, due to a lack of certainty, their contacts could not be included, even with probability that they were adults.

Future Directions

There are numerous possibilities for future directions based on the results of this study. Firstly, an area of interest would be examining the long-term benefits of crisis planning. An unexpected result of this study was that crisis services were largely utilized within each age group, with crisis services including both crisis planning and intervention. It would be interesting to see whether extensive crisis planning resulted in better outcomes and fewer contacts by individuals and families impacted by FASD. Secondly, with the expansion of FARP services to include more areas within Eastern Ontario, extending beyond the Ottawa region, it would be interesting to see if there are geographical influences on the nature of service and support requests by individuals and families impacted by FASD. For example, do individuals or families in rural areas request more support in promoting social interaction in youth with FASD in comparison to those in urban areas, or are there differences in educational support requests made by individuals and families in rural and urban areas? Overall, there remains extensive research to be done into the analysis of supports provided to individuals and families impacted by FASD.

REFERENCES

1. Mattson, S. N., Crocker, N. & Nguyen, T. T. Fetal Alcohol Spectrum Disorders: Neuropsychological and Behavioral Features. (2011) doi:10.1007/s11065-011-9167-9.
2. Popova, S. *et al.* Population-based prevalence of fetal alcohol spectrum disorder in Canada. *BMC Public Health* **19**, 1–12 (2019).
3. Wilhoit, L. F., Scott, D. A. & Simecka, B. A. Fetal Alcohol Spectrum Disorders: Characteristics, Complications, and Treatment. *Community Ment. Heal. J.* **2017** *536* **53**, 711–718 (2017).
4. Elliott, E. J., Payne, J., Morris, A., Haan, E. & Bower, C. Fetal alcohol syndrome: a prospective national surveillance study. *Arch. Dis. Child.* **93**, 732–737 (2008).
5. Badry, D. & Harding, K. Fetal Alcohol Spectrum Disorder and Child Welfare Issue. (2020).
6. Green, J. H. Fetal Alcohol Spectrum Disorders: Understanding the Effects of Prenatal Alcohol Exposure and Supporting Students. *J. Sch. Health* **77**, 103–108 (2007).
7. Bell, C. C. & Chimata, R. Prevalence of neurodevelopmental disorders among low-income African Americans at a clinic on Chicago's South Side. *Psychiatr. Serv.* **66**, 539–542 (2015).
8. Baldwin, M. R. Fetal alcohol spectrum disorders and suicidality in a healthcare setting. *Int. J. Circumpolar Health* **66 Suppl 1**, 54–60 (2007).
9. Streissguth, A. P. *et al.* Risk factors for adverse life outcomes in fetal alcohol syndrome and fetal alcohol effects. *J. Dev. Behav. Pediatr.* **25**, 228–238 (2004).
10. Longstaffe, S. *et al.* The Manitoba Youth Justice Program: empowering and supporting youth with FASD in conflict with the law. <https://doi-org.proxy.queensu.ca/10.1139/bcb-2017-0078> **96**, 260–266 (2017).
11. Popova, S. *et al.* Comorbidity of fetal alcohol spectrum disorder: a systematic review and meta-analysis. *Lancet* **387**, 978–987 (2016).
12. Streissguth, A. P. *et al.* Risk factors for adverse life outcomes in fetal alcohol syndrome and fetal alcohol effects. *J. Dev. Behav. Pediatr.* **25**, 228–238 (2004).
13. Spohr, H. L., Willms, J. & Steinhausen, H. C. Fetal alcohol spectrum disorders in young adulthood. *J. Pediatr.* **150**, (2007).