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Getting ready for national service: A preliminary investigation of the perspectives of young autistic pre-enlistees and their caregivers on national service

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ABSTRACT

As global rates of diagnoses of autism spectrum disorder (ASD) rise, so too will the number of young adults with ASD who are conscripted into National Service (NS) programs. Given the current lack of studies investigating how NS programs can support and cater to such individuals, and how young people can be supported and prepared for NS, this preliminary cross-sectional mixed methods study aimed to: (a) examine the perspectives on NS of young autistic men prior to their enlistment; and (b) investigate the expected roles of family, schools and NS organisations in supporting individuals with ASD before and during NS. Participants were 13 Singaporean male pre-enlistees with ASD (aged 15-17) and 34 caregivers. Thematic analyses were conducted on participant responses to open ended questions. Overall, autistic participants reported feeling both unprepared and reluctant to serve NS. The thematic analysis identified two main subthemes for both young pre-enlistees and their caregivers: one relating to anticipated opportunities (organized in two subthemes of personal development and social contributions/ relationships); and one focusing on possible anticipated challenges (organized into common NS and ASD-related challenges). Participants hope and expect family, schools and NS organisations to play a substantial role in supporting autistic individuals in preparation for NS and provided several specific recommendations to create an inter-connected network of preparation and support, with NS organisations playing a primary role. Recommendations to improve how NS programs can better support individuals with ASD are provided.

1. Introduction

National Service (NS) is a system of either compulsory or voluntary enlisting of people (in most, but not all countries, young men) to serve their country, often in the Armed Forces. In most countries, including Singapore, eligible youths are compulsorily enlisted (*i.e.,* conscripted) to serve NS for a period of a few months to a few years. As global diagnosis rates of autism spectrum disorder (ASD) increase (Elsabaggh et al., 2012), the number of autistic young adults who are conscripted into NS programs is also likely to increase accordingly. Exemptions from NS are typically made on medical grounds, often based on either physical health or psychiatric/ neurodevelopmental conditions. For many individuals with ASD (especially those without associated intellectual or language impairments), serving NS could potentially be an enriching and beneficial experience (Dovrat, 1995). However, research on the

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perspectives of youth with ASD on NS, and how such programs could effectively support their differences and develop their strengths and skills, is scarce.

1.1. NS-related challenges for young adults

Many young men experience stress during enlistment due to challenges such as military discipline and regulation, strenuous physical demands such as having limited sleep, emotional stress and even possible social harassment (Gold & Friedman, 2000; Martin, Williamson, Alfonso, & Ryan, 2006; Shevtsov, 2007). Recruits reported experiencing the greatest anxiety in the first week in an eight-week basic military training (BMT) program, and this subsequently decreased over time (Clemons, 1996). However, not all recruits manage to surmount the challenges of BMT and the inability to adjust to military life is a leading cause for recruits being discharged from the military (Englert, Hunter, & Sweeney, 2003).

1.2. NS-related challenges for autistic young people

The challenges associated with the transition and adjustment to NS may be exacerbated for individuals with ASD (Sterling-Turner & Jordan, 2007). NS organisations[2] often enlist recruits immediately after high school or university, or in their early adult years: a difficult, and often vulnerable phase-of-life transition for many young adults. This is a developmental period during which young adults adopt various adult roles and responsibilities, including pursuing a trade or higher education, developing their independence and navigating peer and romantic relationships.

Research strongly suggests that this post-secondary school period is when young adults with ASD often require more support in social relationships and in fostering their independence while away from the structured and long-term support provided by the educational settings they attended as children and adolescents (Elias & White, 2017; Geller & Greenberg, 2010). Furthermore, this is the period when many young adults with ASD grapple with comorbid health and emotional/behavioural challenges (Howlin & Moss, 2012; Magiati, Tay, & Howlin, 2014). Coupled with the likelihood that they may face difficulties in navigating dynamic and unpredictable environments such as NS, these challenges may contribute to increased risk for anxiety and depression. It is therefore important that the NS organisations provide targeted guidance and appropriate support for the needs of conscripts with ASD prior to, during and after NS.

1.3. Accommodating, supporting & capitalizing on ASD in NS

There is some emerging research on how NS organisations can support and accommodate ASD-related individual differences at the organisational level. For instance, the best vocational roles for many, although not all, individuals with ASD often appear to be those which emphasise technical or specialist skills, while carefully and systematically supporting or reducing social interactions and expectations (Gal, Selanikyo, Erez, & Katz, 2015; Muller, Schuler, Burton, & Yates, 2003). The Roim Rachock Program (RRP; Hebrew for 'viewing far') in Israel is one example of a program capitalizing on the relative strengths of individuals with ASD. The RRP first trained conscripts with ASD to interpret aerial photographs for the Israeli military, then assigned them to an army unit to work for six months (Gal et al., 2015). Over the course of the program, quality-of-life (QOL) and subjective well-being surveys were completed by the autistic participants, who reported being satisfied and feeling more empowered and independent after having worked for six months compared to immediately after they had completed training.

Muller et al. (2003) reported similar findings in a study conducted to improve job matching and job retention services for individuals with ASD in San Francisco. Participants' responses revealed that in addition to emphasising technical skill and reducing social expectations, a suitable job had routine and predictability, an accommodating policy towards learning and social differences and difficulties, and a flexible work schedule. On the other hand, unaccommodating workplace attitudes and a poor job-skill match were commonly cited as negative work experiences.

The findings of these two studies highlight the importance of matching individuals with ASD with a role that capitalizes on their individual strengths and supports their differing individual needs. Additionally, the findings from the RRP suggest that contributing through the active application of skills may lead to improved subjective satisfaction than merely having a well-fitting vocation.

Besides policies at the organisational level, interpersonal supports and opportunities could also likely improve the well-being of individuals with ASD prior to and during NS. Overdale and Gardner (2012) reported that social support from military instructors was the most important source of social support and was directly associated with fewer reported difficulties coping with training demands. Sources of support prior to and during NS can also come from the individual's family. However, the effects of such support are unclear. While some studies have found higher non-military-environment support to be associated with improved military belonging, but paradoxically more difficulties coping in NS (Overdale & Gardner, 2012), others have reported that having a family environment conducive to personal growth and caregivers who cope well with their children's enlistment was associated with better adjustment in the initial weeks of military training (Shulman, Levy-Shiff, & Scharf, 2000). The individual's preparedness for NS has also been positively associated with better adjustment to military life (Israelashvili & Wegman-Rozi, 2007).

Even though Overdale and Gardner (2012), Shulman et al. (2000), and Israelashvili and Wegman-Rozi (2007) included enlistees

[2] As people serve their NS in different parts of the government services, we have used the term "NS organisations" in this paper as a general term referring to organisations/ forces where people typically serve their NS.

without ASD in their studies, their findings converge with those of Gal et al. (2015) and Muller et al. (2003) to suggest that support during NS – especially from instructors – and workplace attitudes that are more supportive and accommodating are likely to facilitate the assimilation of individuals with ASD into NS.

1.4. The present study

Poor transitional outcomes in early adulthood have frequently been documented in adults with ASD (for reviews see Howlin & Moss, 2012; Henninger & Taylor, 2014; Magiati et al., 2014). On one hand, serving NS may help youth with ASD transit to adulthood by providing them with meaningful opportunities to complete their basic education, acquire vocational competencies, and strengthen their personal values, independence, motivation, self-control and self-esteem. On the other hand, associated NS-related challenges could hinder this transition. Strict or inflexible military discipline, physical and emotional stressors, and social isolation or discrimination already pose challenges to several young adults without ASD (Shevtsov, 2007). These challenges are likely exacerbated for autistic enlistees. Given that thousands of young adults are conscripted into NS programs worldwide annually, a substantial number of individuals with ASD will also likely be conscripted into NS. A comprehensive NS framework preparing for, supporting, accommodating, but also capitalizing on ASD prior to and during NS is therefore necessary. To the authors' knowledge, no published research studies to date have investigated the perspectives of individuals with ASD, either prior to, during or post-service, towards NS.

Therefore, using thematic analyses of participants' written responses to open-ended questions, the aims of the present cross-sectional study were twofold:

(1) to explore the NS-related perspectives of pre-enlistees with ASD, and those of their caregivers, 1–3 years prior to their enlistment, specifically how ready they perceive themselves to be; what their attitudes towards NS are; and what they think the most important opportunities and challenges in serving will be;
(2) to explore the perspectives of caregivers and pre-enlistees regarding the support and resources they believe are important and necessary from families, school, and NS organisations to prepare and support them to successfully transition into, and complete, NS.

There were two main reasons for inviting pre-enlistees rather than autistic young men during NS or post-service in the present study. Firstly, in line with recent initiatives and developments by the national military defence forces to engage, prepare and support pre-enlistees *prior to* their NS,[3] we adopted a prospective constructive future-oriented approach and recruited pre-enlistees and their caregivers 1–3 years prior to NS to explore their perspectives, perceived opportunities, concerns and needs, so that the data gathered can inform NS organizations and policy makers regarding pre-enlisting preparatory courses and built-in supports for autistic pre-enlistees and their caregivers. Secondly, there were also pragmatic reasons relating to recruitment. It was not possible to obtain information on ASD diagnosis of young men currently serving or having served NS by the Ministry of Defence, as this is highly classified confidential information.

2. Methods

2.1. Participants

A total of 47 participants (13 male pre-enlistees and 34 caregivers) participated in this cross-sectional study (see Table 1 for participants' characteristics).

2.1.1. Pre-enlistees

Young people were included in the study if they (a) were aged 15–17 years, (b) had a professional diagnosis of ASD (including autism, autism spectrum disorder, Asperger's syndrome, or pervasive developmental disorder – not otherwise specified based on DSM-IV-TR or DSM-5 diagnostic criteria) from a qualified healthcare professional[4] and (c) were likely eligible to be conscripted into NS. Participants with comorbid neurodevelopmental or mental health conditions were included in the study. There were no other exclusion criteria.

2.1.2. Caregivers

The responses of 37 caregivers were obtained. However, data from three caregivers were excluded from the analyses because their sons were under 14 years old, resulting in a final sample of 34 caregivers (see Table 1). Information was available for 15 pre-enlistee-caregiver pairs. The 19 remaining caregivers participated in the study without their sons.

[3] For example, since 2017, pre-enlistees in Singapore can indicate their choice of vocations during NS; there have also been several talks and events aiming to prepare, inform and support pre-enlistees nationally (see Ong, 2018).

[4] Caregivers and/ or young people completed the Autism Quotient-10 Screening measure (Allison et al., 2012) as part of the study and 85% scored above recommended cut-off. As all participants reported a professional diagnosis of ASD from local services in Singapore known to implement good and comprehensive diagnostic assessment practices and all attended specialist schools for autism requiring a valid diagnosis supported by a professional report, data from all participants were retained in the analyses.

Table 1
Participant Characteristics.

	Caregivers (*n* = *34*)	Autistic Pre-enlistees (*n* = 13)
Age in years, *M* (*SD*)	49.41 (5.66)	16.15 (0.90)
Male, *n* (%)	11 (32.4)	13 (100.0)
Data source, *n* (%)		
Online	8 (23.5)	–
Pen-and-paper	26 (76.5)	13 (100.0)
Other reported diagnoses[a], *n* (%)	4 (11.8)	1 (7.7)
Ethnicity, *n* (%)		
Chinese	33 (97.1)	13 (100.0)
Malay	1 (2.9)	–
Pre-enlistees' educational background, *n* (%)		
Mainstream school	9 (26.5)	–
Specialist school (e.g., Pathlight School[b])	25 (73.5)	–
PSLE and below	–	6 (46.2)
GCE O' levels/GCE N' levels/ITE	–	5 (38.5)
Missing data	–	2 (15.3)
Pre-enlistees' mothers' educational level, *n* (%)		
PSLE and below	2 (5.9)	2 (15.4)
GCE O' levels/GCE N' levels/ITE	10 (29.4)	2 (15.4)
GCE A' levels/polytechnics	7 (20.6)	4 (30.8)
Bachelor's degree and above	15 (44.1)	2 (15.4)
Pre-enlistees' fathers' education level, *n* (%)		
PSLE and below	4 (11.8)	2 (15.4)
GCE O' levels/GCE N' levels/ITE	6 (17.6)	2 (15.4)
GCE A' levels/polytechnics	6 (17.6)	1 (7.7)
Bachelor's degree and above	16 (47.1)	5 (38.5)

ITE: Institute of Technical Education; GCE A'/N'/O' levels: General Certificate of Education Advanced/ Normal/ Ordinary levels; PSLE: Primary School Leaving Examination.

[a] Scoliosis (n = 1), intellectual disability (n = 2), anxiety (n = 1), depression (n = 1), dyslexia (n = 1), and dyspraxia (n = 1).

[b] Pathlight School is an autism-focused school in Singapore that provides a more supportive ASD-specific educational environment for students with ASD who are cognitively and verbally able to access the mainstream academic curriculum.

2.2. Procedure

2.2.1. Ethics

Ethics approval was granted by the National University of Singapore (NUS) Institutional Review Board (reference number A-14-032). Caregivers' consent was required, while pre-enlistees also provided assent. All participants had the right to withdraw from the study at any time.

2.2.2. Recruitment

Advertisement posters including the online survey link and the researchers' contact information were distributed in an ASD-specialist school which offers the mainstream curriculum, and in vocational centres, polytechnics, hospitals, and on social media (*e.g.,* online support groups and blogs). Participation was also invited at a pro-bono workshop delivered by the first and last authors. Both hardcopy and online survey versions were available, depending on participants' preference. Caregivers and pre-enlistees were offered the option to participate in the study together, or independently. The survey took about 30 min to complete. Upon completion, all participants provided their contact details, which were kept separately from their survey data. A SGD10 token of appreciation voucher was sent to them to thank them for their contribution and time.

2.3. Measures

A survey consisting of both Likert scale rated questions as well as open-ended questions was developed by the authors for this study in order to explore pre-enlistees' and their caregivers' perspectives on serving NS (specifically readiness, attitudes, perceived opportunities/ challenges, and perceived support; the survey is available upon request from the corresponding author).

2.3.1. Attitudes towards NS

Questions assessing participants' attitudes towards NS were adapted from surveys by Mayseless (1993), Rogers (1935) and Shevtsov (2007) investigating non-autistic students' attitudes towards military service (*i.e.,* should NS be compulsory; exploring alternatives to compulsory NS; undertaking peacetime NS duties; identifying benefits of NS; volunteering for NS vocations aligned with personal skills or interest and what those vocations may be). A composite "attitudes towards NS" score ranging from 0 to 3 was computed with higher scores indicating more positive attitudes.

2.3.2. Perceived readiness to serve NS

Participants were asked to respond to three 5-point Likert (from 1 = least to 5 = most) scale questions on their levels of preparedness, motivation and concerns about serving NS, and to a yes/no question to indicate whether they were planning/ preparing for NS.

2.3.3. Perceived opportunities/ challenges in NS

Three open-ended questions were developed to allow participants to elaborate on their main concerns about NS and their perceptions of the opportunities and challenges of NS: (1) In your opinion, what are some of the benefits/ advantages for individuals with ASD (you/ your son) to serve the nation? (2) In your opinion, what are some of the challenges/ difficulties for people with ASD (you/ your son) to serve National Service? (3) In your opinion, how do you think National Service could prepare or help individuals with ASD, including you/ your son, later in life?

2.3.4. Perceived social support required for transition and adjustment to NS

Three questions were developed inviting participants to rate the level of support they think their family, schools and NS organisations should provide to prepare pre-enlistees with ASD prior to and during NS. Each question was rated on a 5-point Likert scale ranging from 1 (*very little preparation/support*) to 5 (*a lot of preparation/support*). Participants' ratings on these three questions were summed to produce a composite social support score out of 15, with higher scores indicating higher support needs. Participants could also elaborate on their ratings after each response in open-ended space sections. The caregiver version included additional open-ended questions about other types of information and support that caregivers felt would better prepare their child for NS. Two further yes/ no questions assessed participants' knowledge of the availability of existing information/ preparation and support services in NS.

2.4. Data analytic plan

2.4.1. Missing data

Missing data on the NS survey were considered missing at random and were ignored during analyses (Bennett, 2001). Missing data from three participants on the attitude questions and four relating to the social support questions were not included in the analyses.

2.4.2. Thematic analyses of open-ended written responses

Written responses to the open-ended questions were provided by 31 caregivers and 13 pre-enlistees and were first collated from the surveys in one document for analyses (which totalled 16 A4 pages; 13 from caregivers and 3 from pre-enlistees). The caregivers and pre-enlistees' responses were first analysed separately. Responses to the open-ended questions were all copied verbatim and then organized according to Braun and Clarke (2006) in Excel by the first and second authors, supervised and supported by the senior author, who has prior experience in thematic analysis (see Ozsivadjian, Knott, & Magiati, 2012).

2.4.3. Statistics for Likert-scale questions

For questionnaire data and ordinal variables, descriptive statistics are calculated and reported as appropriate.

3. Results

3.1. Research question 1: Pre-enlistees' and pre-enlistee caregivers' perspectives on NS

3.1.1. Attitudes towards NS

Caregivers' (M = 2.13, SD = 0.81) and pre-enlistees' (M = 1.69, SD = 1.18) composite attitudes scores towards NS (range 0–3; higher scores = more positive attitudes) indicate somewhat positive (caregivers) or neutral (pre-enlistees) overall expressed attitudes towards NS respectively.

3.1.1.1. Caregivers. Most caregivers believed that all male citizens should take on some duties and responsibilities as part of NS at times of peace (see Fig. 1) and that NS has its benefits and purposes (see Fig. 2). If their sons had the right skills and qualifications, most caregivers would advise their sons to volunteer in a field of their interest or skill during NS (see Fig. 3). At the same time, caregivers had mixed views about whether *all* male citizens should be conscripted to serve NS, and the Armed Forces in particular (see Fig. 4). If NS could be voluntary, most caregivers said they would advise their sons to volunteer in other national service activities rather than the Armed Forces (see Fig. 5).

3.1.1.2. Pre-enlistees. Pre-enlistees generally had more ambivalent or negative attitudes towards NS than their caregivers. Only a quarter of them believed that all male citizens should take on duties and responsibilities during NS in times of peace (see Fig. 1), and less than half saw some benefits of or purpose to NS (see Fig. 2). Only 15% of the 13 pre-enlistees in this study thought that NS should be compulsory (see Fig. 4). More than half would choose not to serve NS even if they had the right skills or qualifications (see Fig. 3) and would prefer not to volunteer if NS was not compulsory (see Fig. 5).

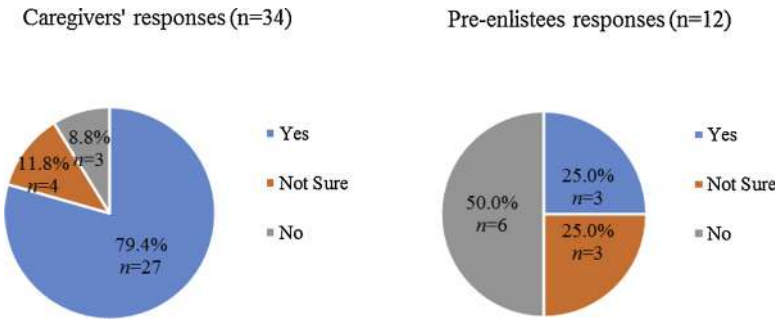

Fig. 1. Participants' Responses to: "Do you think that all male Singaporeans/ Permanent residents should be trained to take on duties and responsibilities during NS in times of peace?".

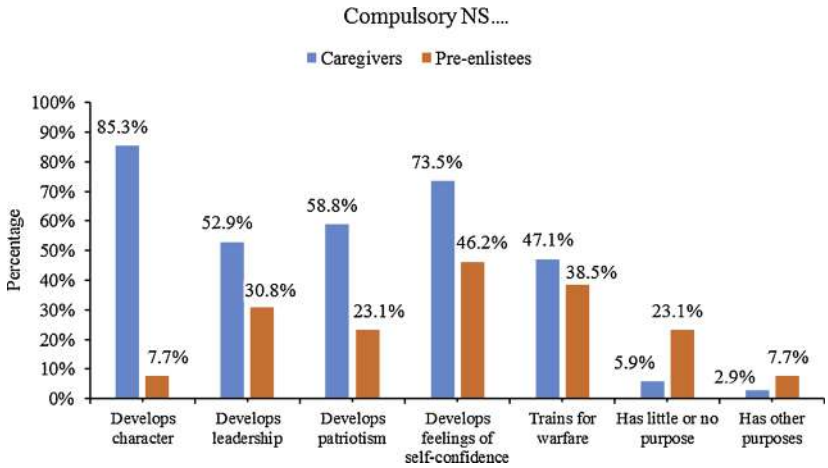

Fig. 2. Participants' Responses to: "In my opinion, compulsory national service …".

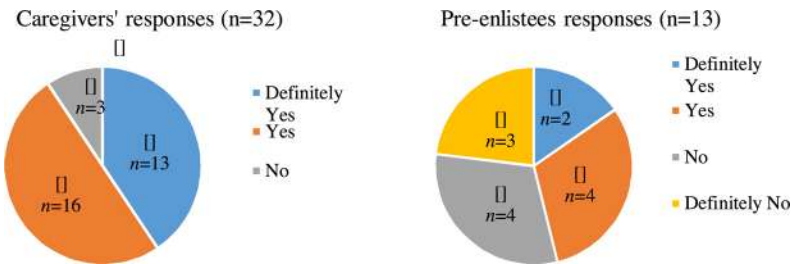

Fig. 3. Participants' Responses to: "If you (your son) had the right skills or qualifications, would you (would you advise him to) volunteer for the field of your (his) interest or skills in the NS?".

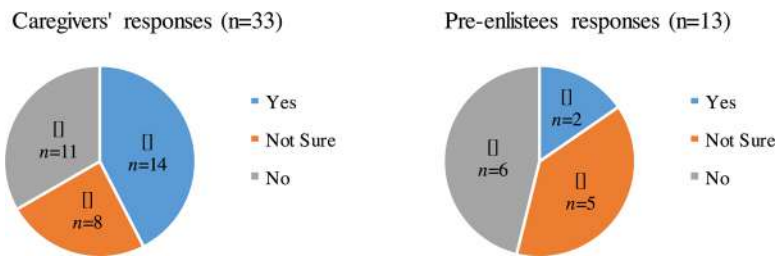

Fig. 4. Participants' Responses to: "Do you think that NS should be compulsory for all men?".

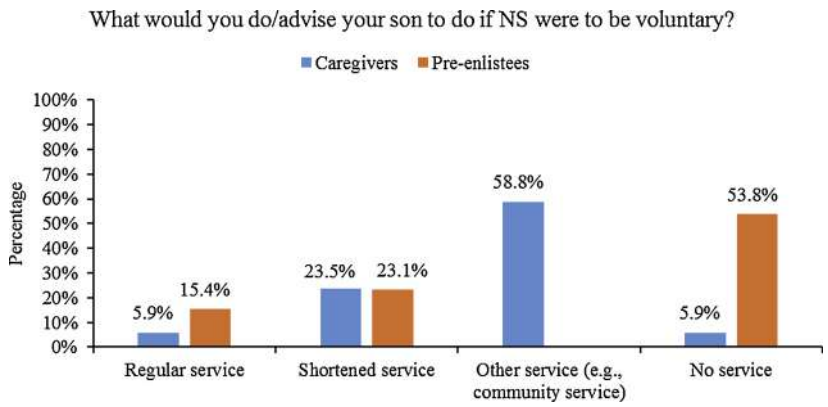

Fig. 5. Participants' Responses to: "If it was decided that NS could be voluntary, what would you (would you advice your son with ASD) to do?".

3.1.2. Perceived readiness to serve NS

Both caregivers and pre-enlistees generally felt unprepared, unmotivated and quite concerned about themselves or their sons serving NS (see Table 2). Half of the caregivers reported that they had made preparations, while only three out of 13 pre-enlistees (23.1%) reported the same.

3.1.3. Perceived opportunities of serving NS

Thematic analyses of participants' written responses to the open ended survey questions revealed two main subthemes relating to perceived opportunities (see Table 3).

3.1.3.1. Personal development. Both caregivers and pre-enlistees often referred to the possibility that serving NS may provide their sons with opportunities to enrich and improve their lives through personal development. The physical nature of military training was perceived as conducive for developing physical fitness by some young people: '*National service can train me physically and mentally.'* One caregiver also echoed this sentiment: '*I think national service can train [individuals with ASD] physically and mentally.*' The regimental structure of NS training was thought to encourage the development of discipline and independence, with one pre-enlistee suggesting that '*[Autistic young men] could develop their character, learn about discipline and develop a sense of patriotism for their country.*' Similarly, one caregiver was of the opinion that '*[youth with ASD] need to learn to survive on their own. Their parents or guardians will not be by their side to tell them what [to do] and what not to do. It [NS] is teaching them to be responsible and respectful individuals.*' Participants also perceived serving NS as an opportunity for autistic young adults to develop self-confidence. A pre-enlistee mentioned: '*I think it would help people be braver and less sensitive in later life*'. One caregiver also explained that one way that NS could prove beneficial to pre-enlistees' self-esteem is by helping them realise that '*they are not any less capable than the next boy*'. Serving NS was also thought to be an opportunity to gain exposure to new experiences. One pre-enlistee appreciated '*having an experience of how it feels like when serving the nation*', and one caregiver suggested that autistic young men in NS could '*learn skills that can be used for work [in the future]*'. Additionally, caregivers thought the rules, routine and structure in NS would likely be a good fit for many young autistic adults. As one caregiver put it, "*[the NS environment lets individuals with ASD] experience a highly structured, rule-based organisation*'.

3.1.3.2. Social development & relationships. Another potential benefit that participants highlighted was that NS could provide an opportunity for individuals with ASD to acquire or practice social skills. For instance, one pre-enlistee was hopeful that one benefit of serving NS may lay in '*[learning to speak] to others without disturbing [sic] them.*' Some caregivers were of the opinion that individuals could develop social skills by '*[learning] to work in a team … [learning] to be subordinate*' and '*[learning] to adapt to social norms'*. Serving NS was also perceived as a chance to develop social relationships and a sense of belonging to the larger community and nation. One pre-enlistee was hopeful that through serving NS, he would be*'able to build more friendship [sic], especially when entering the workforce*'. One caregiver was similarly hopeful that NS would allow autistic young adults to '*feel [like] a part of the larger community'*. Another pre-enlistee saw serving NS as a means to encourage others through example: '*[I] can tell [other pre-enlistees with*

Table 2
Descriptive Statistics of Participants' Reported Perceived Readiness to Serve NS.

	Caregivers (n = 34)		Pre-enlistees (n = 13)	
	M	*SD*	*M*	*SD*
Preparedness for NS	1.62	0.82	1.85	1.14
Motivation to serve NS	2.44	1.44	1.85	0.44
Concerns about serving NS	4.50	0.90	4.00	1.21

Note: Ratings ranged from 1 to 5 (higher scores = more prepared, more motivated, and more concerned to serve NS respectively).

Table 3
Themes and Subthemes of Participants' Reported Perceived Opportunities and Anticipated Challenges of Serving NS.

		Caregivers (n = 31)		Pre-enlistees (n = 13)	
	Themes	Sub-themes	Number of responses (%)	Sub-themes	Number of responses (%)
Perceived Opportunities	Personal Development	Physical Fitness	3 (9.7)	Physical Fitness	1 (7.7)
		Independence/ resilience	13 (41.9)	Independence/ resilience	2 (15.4)
		Discipline	3 (9.7)	Discipline	2 (15.4)
		Self-confidence	8 (25.8)	Self-confidence	1 (7.7)
		Exposure to new experiences	9 (29.0)	Exposure to new experiences	4 (30.8)
		Rules, routines, and structure	2 (6.5)		
	Interpersonal/ Social Development	Social skills	11 (35.5)	Social skills	4 (30.8)
		Chance to develop social relationships	8 (25.8)	Chance to develop social relationships	2 (15.4)
		Chance to contribute to society	2 (6.5)	Chance to contribute to society	2 (15.4)
Perceived Challenges	ASD-specific issues	Difficulties managing social relationships	11 (35.5)	Difficulties managing social relationships	4 (30.8)
		Misunderstanding social cues	12 (38.7)	Misunderstanding social cues	2 (15.4)
		Difficulties with self-expression/communication	9 (29.0)	Difficulties with self-expression/communication	3 (23.1)
		Difficulties with emotional regulation	14 (45.2)	Difficulties with emotional regulation	1 (7.7)
		Teasing/ Bullying related to ASD behaviours	20 (64.5)	Teasing/ Bullying related to ASD behaviours	5 (38.5)
		Peers and commanders not understanding ASD	21 (67.7)	Peers and commanders not understanding ASD	1 (7.7)
	Common NS-related challenges	Regimentation	9 (29.0)	Regimentation	3 (23.1)
		Physical fitness concerns	5 (16.1)	Physical fitness concerns	4 (30.8)
		Stress	7 (22.6)	Stress	1 (7.7)
		Hygiene	1 (3.2)	Hygiene	2 (15.4)
		Safety	17 (54.8)	Being away from family	2 (15.4)

ASD] about my experiences and encourage them that if I can do it, you certainly will [sic]'. As one caregiver put it, serving NS would allow their son to '*contribute to the nation*'.

3.1.4. Perceived challenges of serving NS

Two main themes were identified, one relating to perceived challenges more specific or relevant to autistic people and one discussing general/ common NS challenges faced by most young men during service.

3.1.4.1. ASD-specific anticipated challenges. Participants expressed concerns that autistic young men would experience difficulties managing social relationships in NS. One pre-enlistee was wary that he '*cannot [sic] get along [with others in NS]*'. This was a sentiment reflected by caregivers as well: '*Many people with ASD … have poor social understanding and communication skills, poor self-control and concentration, [are] slow in reacting to situations, and [have] various difficulties which will cause them to be misunderstood, receive punishments or endanger their and their teammates' lives during NS.*'

Difficulties with understanding social cues was also another common theme. As some pre-enlistees put it: '*[individuals with ASD might] struggle to cope with the demands of their seniors*' and '*I might not understand what they instructed me [sic]*'. Caregivers too worried about autistic young men '*not knowing [other] people's perspective [sic]*'. One caregiver was concerned about their son '*trying to follow instructions that are figurative or literal*'. Relating to difficulties in self-expression and communication, a pre-enlistee expressed his concern about '*[not knowing] the meaning of some English idioms/phrases*', while according to one caregiver, '*[individuals with ASD] are poor in motor and communication skills. Often seem to be a non-team player*'.

Difficulties with emotional regulation were also identified by participants as a factor expected to further hinder enlistees' adaptation and social relationships in NS. A pre-enlistee shared his concern about *'being emotionally reactive when commander shouts [sic]*'. One caregiver provided further elaboration in relation to emotional regulation: '*Frankly it's their mood swings. People need to be trained to… know what to do when the individual breaks down. It is not easy but it's a real challenge not only for the officers but also all the team mates [sic].*'

Participants also raised concerns about teasing/ bullying relating to ASD. A pre-enlistee was concerned that '*[he] could also be picked on by others*', while another one stated: '*people don't understand and [they[bully me, and they tease me. I hate people who don't understand me.*' One caregiver worried his son might be '*misunderstood by those who do not know about or understand Asperger's, and [be] written off as weird by peers.*' Caregivers were particularly worried that peers and commanders would not understand their sons' ASD and were concerned as to whether conscripted NS commanders would be sufficiently trained to understand and support their sons with ASD. One caregiver explained: '*Our society has too wide a spectrum of people. We cannot expect [peers and commanders] to understand people with autism … How do we expect other young men of 18+ [years of age] to comprehend them?*'

Table 4
Descriptive Statistics of Participants' Ratings of the Perceived Amount of Support Needed from Family, Schools, and NS Organisations to Prepare Young Men with ASD for NS.

	Caregivers			Pre-enlistees		
Perceived amount of support needed from…	*n*	*M*	*SD*	*n*	*M*	*SD*
Family	32	3.03	1.36	12	2.58	1.08
Schools	33	2.82	1.38	12	2.50	1.45
NS organisations	30	2.73	1.68	11	2.45	1.51

Note: Ratings can range from 1 (very little support and preparation expected) to 5 (a lot of support and preparation expected/ needed).

3.1.4.2. Common NS-related anticipated challenges. Other challenges reported were more general difficulties that could potentially be faced by any young adult in NS, albeit may be heightened for autistic people. Both caregivers and pre-enlistees were worried about assimilating to regimentation and being physically fit enough for NS. One pre-enlistee cited '*fierce commands*' as a concern. Some pre-enlistees worried about physical fitness, voicing concern about '*tough military fitness and physical training*'. Caregivers too were worried about fitness, with one worrying about '*how [my son] will cope with physical challenges that are inherent in NS.*'

Caregivers were more specifically concerned about their sons' safety and ability to cope with stress. One pre-enlistee listed '*emotional stress, anxiety and thoughts of committing suicide*' when asked about the difficulties of serving NS. A caregiver gave a more in-depth articulation of their worries about their son's ability to cope with stress in NS: '*[I am concerned] that he gets too stress[ed] and then go [sic] mad*'. One caregiver explained: '*if [my son] cannot protect himself, can he protect his country? … In no way can he be trained to carry a weapon as it can be dangerous.*'

Hygiene and being away from their families were also particular concerns for some pre-enlistees. One pre-enlistee elaborated: '*I will be dirtied, all my clothes may be dirtied until I have no more clean clothes to wear, I will be in the field for a long time, getting caught in the rain*', whereas one caregiver simply cited general '*cleanliness*' as a concern. Finally, some pre-enlistees also worried about being away from their families: '*… not being able to help my family whenever they need help … not [being] able to spend time with them*'.

3.2. Research question 2: How can families, schools, and NS organisations support successful conscription of pre-enlistees with ASD?

Both caregivers and pre-enlistee participants in this study rated the family unit as being best able to provide support, followed by schools and then NS organisations (see Table 4).

Participants' responses to the open-ended question asking them about their expectations of support from their own families, schools and NS organisations in preparation for NS are organized and presented in Table 5.

3.2.1. Expected support from families

3.2.1.1. Family supporting pre-enlistees' personal development. Both caregivers and pre-enlistees thought that families could provide preparation and support through encouraging physical training. One pre-enlistee was hopeful that his family could '*bring me to outdoor sports (e.g., swimming)*', while one caregiver shared that their family could '*get [my son's] body prepared by getting back to the gym and stadium to build his stamina [and] show him how to check his diet*'.

Caregivers also believed that families could prepare pre-enlistees with ASD for NS by nurturing their children's independence early on. One caregiver hoped to support their son '*to be as independent as possible, to look after himself, to problem-solve when things do not go according to his expectation [sic] or schedule.*'

Additionally, caregivers also saw it as the family's role to support social and emotional development and foster opportunities for social problem solving and skills practice in preparation for NS (*e.g.,* teaching their sons, for example, to distinguish between '*sincere vs. fake acquaintances*' and encouraging them '*to participate in social events, especially overnight camps*'). Teaching emotional regulation was also a role that caregivers felt families could fulfil, particularly '*how to ignore unhelpful remarks [and teaching] stress management techniques.*'

3.2.1.2. Family providing NS-specific coaching & guidance. Participants also expressed their hopes and expectations that the family could prepare pre-enlistees specifically for the transition to NS by managing their expectations of, and educating them about NS. One pre-enlistee said he wanted his parents to '*explain to me on what will be happening in National Service as well as the advantages/ disadvantages of serving National Service*'. Caregivers too acknowledged the active preparatory role that the family could shoulder: '*make arrangement for [my son] to speak to other ASD youth who have gone thru NS [sic]*'; or '*sharing videos and stories on life in NS from [the Ministry of Defence websites]*'.

Besides being responsible for gathering information about NS, the family was perceived as a vital source of encouragement, moral support and motivation for the pre-enlistee. Some pre-enlistees expressed their desires for '*emotional support*' and others described the roles of the family as such: '*They should encourage me morally and give me their full understanding when I face harsh negative situations at camp*'. One caregiver wrote about preparing their son through '*listening, counselling, role play, [and] encouragement*'.

3.2.2. Expected support from schools

3.2.2.1. Schools fostering personal development. Physical fitness was a concern and schools were expected to encourage physical training, with most responses generally citing existing physical education programs conducted in schools. Pre-enlistees mentioned

Table 5
Themes and Subthemes of Participants' Expected Support from Families, Schools and NS Organisations in Preparation for NS.

		Caregivers (n = 31)		Pre-enlistees (n = 13)	
	Themes	Sub-themes	Number of responses (%)	Sub-themes	Number of responses (%)
Support from families	Personal development	Provide physical training	8 (25.8)	Provide physical training	1(7.7)
		Teach emotional regulation	4 (12.9)	Teach emotional regulation	1 (7.7)
		Train and practice social skills	2 (6.5)		
		Nurture independence	1 (3.2)		
	NS-specific coaching & guidance	Educate on NS	11(35.5)	Educate on NS	3 (23.1)
		Manage NS expectations	12 (38.7)	Manage NS expectations	3 (23.1)
		Provide encouragement and moral support	10 (32.3)	Provide encouragement and moral support	3 (23.1)
Support from schools	Personal development	Provide physical training	6 (19.4)	Provide physical training	2 (15.4)
		Nurture independence	3 (9.7)		
		Train social skills	4 (12.9)		
	NS-specific guidance and exposure to regimentation	Educate on NS and provide vocational advice	18 (58.1)	Educate on NS	2 (15.4)
		Manage NS expectations	19 (61.3)	Manage NS expectations	2 (15.4)
		Provide encouragement	3 (9.7)		
		Collaborate with NS organisations	8 (25.8)		
		Provide regimental co-curricular activities	1 (3.2)		
	Collaborate with stakeholders	Discuss pre-enlistees' needs with caregivers	3 (9.7)		
		Provide transition report to NS organisations	3 (9.7)		
Support from NS organisations	ASD-specific support	Increase flexibility in NS screening and vocational postings	3 (9.7)	Increase flexibility in NS screening and vocational postings	1 (7.7)
		Increase support for enlistees with ASD	14 (45.2)	Increase support for enlistees with ASD	2 (15.4)
		Increase transparency on available supportive framework	22 (71.0)	Increase transparency on available supportive framework	1 (7.7)
		Availability of integrated healthcare services	1 (3.2)		
		Training NS personnel on ASD conditions	10 (32.3)		
	Targeted NS guidance	Provide pre-enlistment NS education	24 (77.4)	Provide pre-enlistment NS education	1 (7.7)
		Provide pre-enlistment NS exposure	9 (29.0)	Provide pre-enlistment NS exposure	2 (15.4)
		Manage NS expectations	21 (67.7)		
		Provide vocational advice	1 (3.2)		
	Collaborate with stakeholders	Collaborate with caregivers	9 (29.0)		
		Parental access to key NS personnel	3 (9.7)		
		Collaborate with schools for NS suitability assessment	10 (32.3)		

'*extra [physical education] lessons*' and suggested that schools '*could engage us in workouts or mass exercises to help get us into shape*'. Caregivers too suggested more '*physical conditioning*'. Caregivers believed schools could nurture independence: '*[Schools can] equip my son with independent life skills*'. Caregivers also thought that schools could assist with social skills development, with one caregiver expressing a desire for schools to conduct '*more outdoor type activities, [such as] camping overnights [sic], high elements training … teamwork building etc.*'

3.2.2.2. Schools providing NS-specific guidance and exposure to regimentation. Participants thought that it would be important and helpful for their sons' schools to provide encouragement and manage pre-enlistees' expectations of NS. Additionally, participants hoped for schools to be capable of supplementing NS education with vocational advice. One pre-enlistee felt '*my school could organise talks and presentations about NS and its benefits*', while caregivers suggested that schools '*get servicemen of appropriate vocations to give talks to the students*' or '*collaborate with NS organisations on familiarization events*'. Such events would include '*[organizing trips] to army camps*' and similar tours of environments that pre-enlistees would likely encounter during NS. Some caregivers also felt schools could do more to provide pre-enlistees with encouragement: '*more encouraging talks from teachers. Perhaps show [pre-enlistees] or have regular [i.e., full time] personnel to go to the school to show them what exactly is National Service.*' Caregivers perceived schools to be capable of not only providing guidance on NS-related issues, but also introducing regimental life in a familiar environment. One caregiver suggested that '*all boys in school could go through [uniformed group] training*'.

3.2.2.3. Schools collaborating with stakeholders. Caregivers felt schools could and should monitor pre-enlistees' performance, behaviour, skills, and development and regularly discuss their personal strengths and needs with their caregivers: '*[schools can] have a thorough talk with the students and the parents about NS for [those with] special needs*'. Caregivers also expressed a desire for schools to '*provide transition reports, when the student graduates*' prior to enlistment.

3.2.3. Expected support from NS organisations

3.2.3.1. NS organisations providing ASD-specific support. Participants thought that NS organisations should be more flexible in NS screenings and vocational postings, paying attention to providing a good match between the individual's skillset and needs and a suitable NS role/ vocation. One pre-enlistee wrote that NS could '*[provide] me with basic [information] on what to do when I want to work in army libraries*'. Prior to enlistment, one caregiver also requested for a '*face to face meeting with [my son's potential] unit supervisor, to communicate my child's condition & provide open communication for exploring how else my child can fit in the unit*'. Participants hoped that NS organisations could provide increased support for enlistees with ASD. A pre-enlistee felt that '*[NS organisations] should pay attention to the recruits and help to assist them whenever they feel uneasy*', and one caregiver hoped there would be '*support for people with ASD (e.g., psychologist, OT [occupational therapist])*'.

While caregivers expressed a strong desire for NS organisations to implement a more ASD-specific supportive framework to better prepare and support individuals with ASD in NS, many caregivers confessed that they did not know much about specific policies that may already be in place. Many caregivers therefore also indicated a desire for increased transparency and more information in advance from NS organisations in terms of how individuals with ASD can be supported in the organisation. This uncertainty was perhaps best expressed by one caregiver who wrote: '*I think they have a more systematic process – but [these are not currently] clearly communicated to parents.*' In a similar vein, another caregiver requested that NS organisations '*Tell us how our child would [sic] be cared for when he reports for NS.*' One caregiver expressed their appreciation of having some level of integrated healthcare service by recounting the assurance they had received that NS doctors and psychiatrists would closely monitor their son during NS: '*At least we got the assurance from the medical officers during their medical check-up that our son will be closely monitored by the doctors and psychiatrists when he reports to NS and that we should continue to follow up with our child's own psychiatrist on a regular basis.*'

Caregivers also expressed a need for NS organisations to train NS personnel so that they can better understand and support autistic enlistees. One caregiver hoped for '*staff to be trained in behaviour support of ASD*' and another wished NS organisation would '*educate officers and NCOs [non-commissioned officers] on ASD and the management approach [sic].*' Overall, participants thought that NS organisations could play a vital role in providing for the well-being of enlistees with ASD. However, most participants were uncertain about the precise nature of said role and the specific execution of such responsibilities.

3.2.3.2. NS organisations providing targeted NS guidance. Caregivers hoped NS organisations would play a more active role in preparing pre-enlistees with ASD for NS by: managing pre-enlistees' expectations of NS; providing pre-enlistment NS education and exposure; and offering vocational advice to pre-enlistees with ASD. A caregiver suggested: '*[NS organisations can] conduct talks, visits to camps, demonstration of activities that a serviceman will undergo during national service, [introduce] people, such as the counsellor and [other resources such as] the isolation room [participant referring here to calm-down rooms or settings, in which the servicemen with ASD can have some quiet/ calm down time]*.'

3.2.3.3. NS organisations collaborating with the other stakeholders. Caregivers expected NS organisations to collaborate with both families and schools. Some caregivers considered it important to have open personal communication with key NS personnel to '*ensure [people in the NS organisation] have full comprehension of my child's condition.*' One caregiver requested: '*Tell us how our child would be cared for when he reports for NS. Would [NS organisations] have the same care of having doctors and psychiatrists to attend to my son in the event [that] he does break down or when his mood swing kicks in [sic]?*' Caregivers also thought NS organisations needed to collaborate with schools more closely for NS suitability assessments. One caregiver wrote: '*MINDEF [Ministry of Defence] and school can collaborate on what physical activities needs to be trained [sic]*.' Such a collaboration would entail having regular servicemen provide

demonstrations of NS duties in schools and would also include working with schools to determine prior to NS whether young pre-enlistees can serve and what may the best roles for them be.

4. Discussion

The first aim of this study was to explore the NS-related perspectives of young men with ASD, and those of their caregivers, prior to their enlistment. Consistent with the idea that enlistment into NS represents a stressful transition from civilian life for many conscripts (Shevtsov, 2007), both caregivers and pre-enlistees in our study were hesitant to fully endorse all aspects of NS. Specifically, the pre-enlistees generally reported low readiness to serve NS and high reluctance to be voluntarily involved with NS-related activities. While the caregivers appreciated many potential NS benefits, they too had several concerns. More than half of the caregivers were more inclined, given a choice, to having their sons volunteering in non-Armed Forces activities as part of NS. While the potential identified benefits of NS were relevant to all conscripts, autistic and non-autistic, the perceived challenges reported were often more specific to autistic young people, as they related directly to the social, communication or behavioural differences often associated with ASD.

The second aim of the study was to explore the types of support and resources perceived to be important and helpful from families, schools and NS organisations to facilitate the transition into NS for individuals with ASD, and their subsequent adjustment to life in NS. The types of support articulated by the autistic pre-enlistees who participated in our study were mainly focused on receiving more physical training; learning and understanding more about NS prior to enlistment; receiving encouragement, formal and informal support; and having more flexible NS screening and vocational postings. As for the caregivers, they thought that families and schools could and should play a substantial role in nurturing personal development prior to and outside of NS and expressed their hope for a holistic support network: schools and NS organisations were expected to not only liaise with each other, but also with families, thus forming a tripartite support structure for individuals with ASD prior to and during NS. These findings are mostly consistent with previous studies reporting the need for support both within (Overdale & Gardner, 2012), and outside of the military training environment (Shulman et al., 2000). While caregivers expected all three entities (families, schools, NS organizations) to provide some form of NS-guidance prior to conscription, they expected NS organisations to be primarily responsible for ensuring that the NS environment understands, accommodates and appropriately supports enlistees with ASD. Considered together with Israelashvili and Wegman-Rozi (2007) finding that preparing for NS was associated with better adjustment to military life, this suggests a gap that NS organisations can target in order to improve the adaptation and well-being of conscripts with ASD.

4.1. Strengths & limitations of the present study

To the authors' knowledge, this preliminary study is one of the first to explore the perspectives on NS of pre-enlistees with ASD and their caregivers, providing preliminary insight into the attitudes, worries, hopes, and expectations regarding the types of support they would like to receive or need from relevant stakeholders.

One limitation to consider is that our thematic analysis was carried out on participants' written responses *via*a survey. Limited or no responses by some of the participants to some questions cannot, and should not, be regarded as an indication of the absence of experiences or perspectives, as this could be due to fatigue from completing the survey or due to lack of follow-up questions to generate further elaboration and richer responses. As participants responded in writing to a series of open-ended questions and no face-to-face interviews or focus group discussions were carried out, it was not possible to elaborate further, clarify or expand on the responses; therefore, it is possible that the thematic analyses and themes identified may not fully capture the range of perspectives and experiences, for which focus group methodologies in future studies are recommended.

Another limitation was that the participants were mostly young people and caregivers from a single autism-specific school who were recruited through online and social media platforms. This was because it was not possible for the authors to obtain approval to inform young people with ASD and their caregivers about our study *via* the public mainstream schools, many of whom will also likely be eligible for NS. The sample size, especially from pre-enlistees themselves, was small and thus the findings should be considered preliminary and require replication in Singapore and other countries with compulsory or voluntary NS.

Finally, the survey was constructed with feedback from some caregivers, but not from the pre-enlistees themselves. Future studies seeking to replicate these findings need to refine the survey with input from autistic people who are eligible for or have already completed NS (Pellicano & Stears, 2011; Pellicano, Dinsmore, & Charman, 2014).

4.2. Possible Implications & Recommendations for future research and preparation/ support services

Collectively, participants in our study expressed consistent views that, overall, individuals with ASD perceive or face more challenges than benefits from being conscripted into NS. The thematic analysis of the types of support expected from family, school, and NS organisations reveals a possible means by which this apparent asymmetry between perceived challenges and perceived benefits could be addressed for future cohorts of young autistic people who may be able to serve. Adopting a two-pronged approach of developing the individual's physical fitness, independence and problem-solving skills, while simultaneously improving conditions and support systems at home, in schools, and in the NS organizations, could result in a better overall NS experience not only for individuals with ASD, but also their peers and commanders. For instance, nurturing independence and social skills, in addition to guidance and preparation for NS, would ensure young adults with ASD would be better prepared for some of the challenges they might encounter in NS. Meanwhile, more supportive, accommodating and accepting NS policies, in addition to inter-stakeholder collaboration, would strengthen the support network for young people with ASD prior to and during NS and reduce misunderstandings, stressors and potential barriers or challenges. Such policy changes would also maximize

opportunities for a better fit between the young autistic person's strengths and skills and the NS environment, positions, and roles they serve in, possibly enabling better post-NS vocational training or employment.

In summary, participants, especially the caregivers, identified families, schools, and NS organisations as key stakeholders with relatively equal roles and responsibilities to carry out the following key recommendations to facilitate transition and successful adaptation:

(i) increase eligible/ suitable for NS pre-enlistees' preparedness and readiness to serve NS in the months/ years prior to NS by preparing them physically, emotionally, mentally and practically;
(ii) assess suitability for NS in a careful and systematic way and allocate suitable roles/ training opportunities/ NS placements to young autistic people, while providing clear support networks within NS;
(iii) address families' concerns about NS through outreach and education campaigns regarding NS; and
(iv) increase awareness and understanding of ASD within NS organizations.

Future studies should consider larger and more representative groups of participants and may include participants without ASD or with other neurodevelopmental or mental health conditions as a comparison group. Alternatively, future studies could also adopt a follow-up design to evaluate any changes in perspectives of individuals with ASD and their caregivers pre- and post-enlistment and to monitor, support and evaluate their preparation and adaptation to NS over multiple time-points.

The perspectives of other stakeholders, such as the teachers and the NS staff, who will likely be directly involved in supporting individuals with ASD in NS, also require investigation. The compilation of *actual* experiences of autistic men who have already completed NS and the investigation of the perspectives and needs of all stakeholders will provide a more comprehensive synthesis of the opportunities, challenges and outcomes of young people with ASD in NS, creating a more integrated and multi-perspective platform of understanding, from which comprehensive guidelines and recommendations that can be relevant to most NS settings across the world can be developed.

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