ORIGINAL RESEARCH ARTICLE

Influence of parental education on care patterns of children with attention deficit hyperactivity disorders in Indonesia

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Abstract

Severe disparities in the care of children with Attention Deficit-yperactivity Disorder (ADHD) against the background of financial stability and parental demographic areas are major public health challenges in Indonesia. This study was designed to investigate how parental education influences care pattern of children with ADHD. We carried out interventions in the form of counseling and assistance regarding the care of ADHD children in the family. Of the 70 children included in the study, 33 (47.1%) did not attend mental health appointments and 51 (72.9%) did not receive any treatment at 3 to 6 month follow-up. Logistic regression showed that increasing age and medication problems were associated with fewer follow-ups on mental health appointments ($P < 0.05$) and less treatment utilization ($P < 0.05$). The results of this study implicated that the higher the educational background the parent has, the more adequate treatment the ADHD children receive. This is the fact that care patterns are likely dependent on parental education's status. Further study on which factor between financial status and socio-demographic that has higher impact on ADHD children's parents and coping style should be conducted. *(Afr J Reprod Health 2024; 28 [10s]: 93-99)*

Keywords: Attention deficit hyperactivity disorder; care patterns; demographic region; financial stability; parental education

Résumé

De graves disparités dans la prise en charge des enfants atteints de trouble déficitaire de l'attention-hyperactivité (TDAH) dans le contexte de stabilité financière et de zones démographiques parentales constituent des défis majeurs de santé publique en Indonésie. Cette étude a été conçue pour étudier comment l'éducation des parents influence les modes de garde des enfants atteints de TDAH. Nous avons réalisé des interventions sous forme de conseil et d'assistance concernant la prise en charge des enfants TDAH dans la famille. Sur les 70 enfants inclus dans l'étude, 33 (47,1 %) ne se sont pas présentés à des rendez-vous de santé mentale et 51 (72,9 %) n'ont reçu aucun traitement après 3 à 6 mois de suivi. La régression logistique a montré que l'augmentation de l'âge et les problèmes de médicaments étaient associés à moins de suivis lors des rendez-vous de santé mentale ($P < 0,05$) et à une moindre utilisation du traitement ($P < 0,05$). Les résultats de cette étude impliquent que plus le niveau d'éducation du parent est élevé, plus les enfants atteints de TDAH reçoivent un traitement adéquat. C'est le fait que les modèles de garde dépendent probablement du statut d'éducation des parents. Une étude plus approfondie devrait être menée sur le facteur entre la situation financière et la situation sociodémographique qui a le plus grand impact sur les parents des enfants atteints de TDAH et sur le style d'adaptation. *(Afr J Reprod Health 2024; 28 [10s]: 93-99).*

Mots-clés: Trouble déficitaire de l'attention avec hyperactivité; les modèles de soins; région démographique; stabilité financière; l'éducation des parents

Introduction

The found gap of health medication service in Indonesia is still large, especially in mental health service. One of the keys of family resilience is parental education background and it is mainly influenced by social status of a family in their neighborhood. Studies on family resilience (FR) have been carried out for decades to identify the role of families in dealing with the conditions of family members who suffer from illnesses, experience symptoms, or have certain health diagnoses. Family with members who experience Attention Deficit-Hyperactivity Disorder (ADHD) is the main focus of this study health facilities in Indonesia have not been established to provide comprehensive care to

children with ADHD. We often discourage by how health providers treat specific patients, while the problem is not only laying on them but the patients themselves. Patients who have lower educational status are often ignorance to health access and facilities, especially when it comes to mental health problems. It is in line with previous research that state parents with lower educational status tend to feel disconnect with technology[1].

A study entitled "Using an integrated competency model to evaluate a health visitor cascade training program for the Family Resilience Assessment Instrument and Tool (FRAIT)" published in the journal Nurse Education in Practice[2], identified the appropriate caregiving behavior of families with sick members, as a way to improve the quality of care provided. Evaluation using FRAIT can help to analyze the extent to which family resilience plays a role in the patient care process both at home and in health facilities[3,4]. However, FRAIT has not been applied to monitor how parents with ADHD children treat their kids properly. It was the first gap we identified in the context of rural Indonesia.

Another article published in the journal Archives of Psychiatric Nursing (2022)[5] reported the socioeconomic determinants of FR in managing ADHD. Families with low incomes tend to have low FR levels. This was proven in an article article entitled "Predicting Behavioral Health Outcomes Among Low-Income Families: Testing a Socioecological Model of Family Resilience Determinants" by Taylor & Distelberg (2016)[5] published in the Journal of Children and Families. It provided evidence that low-income families tend to care for their ADHD children and later blame their social status for their inability to nurture the children to adulthood.

ADHD has a related benefactor to family resilience due to the age pattern. Adolescents with ADHD expressed lower levels of resilience when compared with Transboundary Diagnostics Analysis (TDA) [6]. ADHD itself is largely associated with lower levels of resilience, due to family factors (parenting, environment, school, etc.). Siblings without ADHD have lower levels of resilience when compared with TDA. This study will address the resilience of adolescents with ADHD as compared to other family members. It will reflect on how the resilience is connected with social intact.

In this study, we investigated the disparities and gaps in the care of children with ADHD against the background of financial stability and demographic areas of parents. We identified specific differences in services and care because parents who did not have permanent jobs tended to let children with ADHD grow up without special attention. We also examined the level of parental education regarding ADHD treatment carried out by parents starting from the day the parent's received information that their child had ADHD. The knowledge and perceptions of parents with low financial stability apparently influence how they care for children with ADHD throughout their lives, especially during the school age phase.

In archipelago country like Indonesia, ADHD a challenging problem, especially in terms of service provision and care in health facilities. We believe the results of this study will inform the design of appropriate policies and programs to educate and support parents with children affected by ADHD.

Methods

Study design

The study was carried out with interventions in the form of counseling and assistance provided through a range of group-based program to support parents to become more effective and confident in managing children with ADHD. Using a longitudinal cohort design, parents of children with ADHD from urban and rural parts of Malang, East Java were surveyed regarding their knowledge and perceptions of ADHD. We identified them by gather the data from database in several health providers and asked them to join the research by using confidentiality contract. The consented parents who have ADHD children from both urban and rural area then were grouped in new WhatsApp group managed by the researchers. They were then followed for 3 to 6 months to determine whether or not they used services available in health facilities. For the next 3 to 6 months, researchers carried out the interventions program. The intervention program we provided

consisted of ADHD modul for educational purposes toward parents on how to maintain stress and resilience in their household. The intervention was delegated into four parts of parental group discussion in meeting as scheduled one per month. We also encouraged the parents to communicate between another in WhatsApp group. We positioned parents as the first caregivers of ADHD children, so that the gap or economic disparity between parents can be minimized. In the end of intervention session, we have interview with the parents to collect the data.

Data collecting

Data were collected using interview in between intervention session and questionnaire. The survey domains were: 1) Financial stability consisting of employment, monthly income, monthly expenses, ability to save, number of dependent family members, and number of ADHD children; and 2) Demographic area consisting of location of residence (city, village, or remote island), type of area of residence (mountains, coast, or sloping land), and whether or not there is adequate access to information. We collected the data by using questionnaire and interview sheet for each parent. Data were collected by gathering parents in a meeting in Malang and WhatsApp group. The sample size was calculated by the consented parents who willingly joined the research from several mental health providers in rural and urban area. The 3- and 6- months follow-up were held to collect the development of intervention results.

Data analysis

Data from survey were analyzed using statistic descriptive with the help of Statistical Package for the Social Sciences (SPSS) version 14.0. Paired t-tests were conducted to determine differences in scores from baseline to 3- and 6-months follow-up on measures. Logistics regression analysis was done by using the data from questionnaire in each intervention section. We gathered the data by using two domains: financial stability and demographic region. The mean and standard deviation (SD) then were calculated to assess each factor of influence based on parents' educational background.

Consent of the study

Parents who will to participate took the consent form in confidentiality form to join the research. Meanwhile, if any parent wanted to bail the research during the process, they stated their reason by then. Consents were signed before they joined the WhatsApp group and monthly meeting.

Results

Seventy parents of children aged 5 to 18 years with untreated ADHD were enrolled during the pre-study. Of the 70 children, 33 (47.1%) did not attend mental health appointments and 51 (72.9%) did not use any treatment at 3-to-6-month follow-up. Logistic regression showed that increasing age and medication problems were associated with fewer follow-up mental health appointments ($P < 0.05$) and less treatment utilization ($P < 0.05$). As of parental education background, of the parents, 42 (60%) were senior high school graduate, 22 (31%) were bachelor graduate, and 6 (8%) were junior high school graduate. Table 1 shows the results of survey domains.

Most of parents were employed and had steady monthly income. However, most parents reported that their monthly expenses were quite high and could not be paid by their salary. We obtained that parents who lived in rural area tend to save more than parents who lived in urban area. Parents have two to four dependent family members and one to two ADHD children. Location residence of parents as respondents were higher from urban area and type of area were separate evenly from mountain to coast landmarks. Parents from urban area have proper adequate access to internet and health information since the city has professional health care facilities, while parents from urban area who work as farmer and other have no proper access to health information regarding ADHD.

The crux of the problem in the researchers' findings revealed that parents' concerns about the ineffectiveness or safety of treatment, or preferences for counseling began as soon as parents discovered the fact that their child had ADHD. Elderly people, especially those with unstable financial backgrounds, are hesitant to initiate care and

Table 1: Domain analysis pre-intervention program

Domain	Indicator	Mean	SD
Domain 1: Financial Stability	Employment Status	91.17	24.36
	Monthly Income	13.32	6.77
	Monthly Expenses	3.57	2.16
	Ability to Save	5.38	2.93
	Number of Dependent Family Member	49.78	8.57
	Number of ADHD Children	45.26	10.34
Domain 2: Demographic Region	Location of Residence	33.35	10.30
	Type of Area	36.63	11.67
	Adequate Access to Health Information	49.36	7.69

treatment based on their financial condition and location of residence. Parents who were more hesitant to begin treatment for their ADHD child were less likely to participate in mental health appointments and follow-up. And while they say that to address this, they recommend addressing the issue of medication when referring ADHD children to mental health services or offering treatment. Researchers got specific results on how to get and educate all people as parents of ADHD children from any financial background and any demographic area about this problem, not just a skewed sample in large cities in Indonesia.

Discussion

Researchers found that children with ADHD are a public health problem that has a huge impact on the population of poor families. The negative impact in this case is the family's perception of academic failure and the child not being successful in the future. Of course, these findings deserve as much public health attention as infectious diseases or polluted water because ADHD children can also grow up well and should get jobs like normal adults. The strength of this study focused on how educational status affect the management of ADHD children in a household. Parents who maintain the caring and coping style were definitely influenced by how they process information regarding their children condition. Meanwhile, we also have some limitation of lacking data. We cannot reach all of parents with ADHD children to justify our findings and we only conducted the research in Malang, Indonesia.

The interview between parents from junior high school graduate, senior high school graduate, and bachelor graduate implicated that the higher the educational background the parent has, the more adequate treatment the ADHD children receive. This is the fact that care patterns are likely dependent on parental education's status. It was also supported by where the parents live. Urban parents tend to provide proper treatment for their ADHD children, while rural parents tend to not care much about it and let their children adapt to the family condition. Although urban parents spent more on living expenses, we obtained that they spent their salary on providing care for the children. Thus, parents from rural area were able to save more, but they allocated their money to other things and not for treatment of their ADHD children. We assumed that the location of residence and adequate access of health information and health care were highly influence the decision of parents with ADHD children to advocate their children with proper care or not. This is where resilience of family or caregivers is highly needed[6,7]. Whereas some research conducted have provided the influence of ADHD children care with filial background and the underlying factors.

Based on the Diagnostic and Statistical Manual of Mental Disorders (DSM), 4th Edition, 3 onsets of ADHD occur under the age of 7 years. Symptoms begin to appear at an early age with an average age of onset of 3-4 years. This disorder is found 2-4 times more frequently in boys than girls.

The prevalence rate for ADHD varies depending on the screening instrument, diagnostic criteria, and characteristics of the population studied. In Indonesia, the method for diagnosing this disorder is based on the diagnostic criteria according to the Guidelines for the Classification and Diagnosis of Mental Disorders in Indonesia III or the Diagnostic and Statistical Manual of Mental Disorders Edition IV. In accordance with DSM IV criteria, the prevalence of sufferers of this disorder in school-aged children is 15.8% among 3006 children aged 3-18 years. Study reported the prevalence of this disorder among 540 children aged 4-17 years in Columbia as 18.2% for preschool aged children, 22.5% for children aged 6-11 years, and 7.3% for children aged 12-17 years. Although many studies report different prevalence figures, roughly the prevalence of this disorder is around 2% - 5%. (6,8).

The study with the title "Resilience of Mothers of Children with Attention Deficit Hyperactivity Disorder and Its Related Underlying Factors" published in the Journal of Preventive Epidemiology Volume 4 Issue 2 found that the average resilience score of mothers with ADHD children was 65.7 which is in the category moderate resilience[8]. Linear regression analysis resulted in p = 0.379, which means there is no significant relationship between age and resilience. This research is good enough to see the resilience of mothers who have ADHD children. But there was no explanation of mother's demographic region or financial stability.

Family source factors that influence parents' ability to adapt and parenting are parents' health, parents' educational background, parents' socio-economic status, parents' ability to communicate with other people, family flexibility in various ways, especially in terms of parenting, cohesiveness or connectedness. parents with other people. This includes support from family, support from friends, support from the community and support from health services. The next factor is situational analysis of personal success experiences which are usually in the form of achievements. This supports parents' ability to adapt when they receive something unexpected. The achievements obtained by children influence the treatment of parents towards children so that they can change something negative into positive. Then other people's experiences can also be a measure for parents of their child's success. This could be something that worsens parents' adaptive abilities. If adaptive abilities decrease, this will affect parents' parenting patterns for children with ADHD.

As by providing annual report, other study explains that the effectiveness of various treatments for children with special needs is determined more by the role and support of family and other people closest to them. Support and acceptance from family and those closest to them can provide energy and confidence in the child. However, this study has a small enough sample to be able to represent the results obtained through analysis. There needs to be additional background factors as to why adolescent resilience appears or decreases, for example differences in age, gender, and the closeness of siblings with ADHD to other siblings. Children become more willing to learn and try new things related to the skills they have and can produce proud achievements. Based on the background above, it can be concluded that the problem raised in this research is the adaptability of parents who have ADHD children and how parents behave in caring for and controlling the behavior of ADHD children.

The resilience or endurance of ADHD children is greatly influenced by the resilience of their parents and family. If cared for by a caregiver, the caregiver's background—even if professionalism is maintained properly—will still have an impact on the ADHD child[5,9,10]. The filial factor is indeed one of the resilience factors in ADHD children, but the environment in which ADHD children grow up and experience nurturing effects also influences it. From the other research, we also determined that coping styles of parents of caregivers can also affect greatly to care patterns of ADHD children[11–13]. Meanwhile, coping styles is influenced by parents or caregiver's educational background[14,15].

One of model in health education that can explain the disparities of care patterns among parents with ADHD children is ecological model. The ecological model is considered safe enough to describe the relationship between physiological/genetic factors and environmental factors as a product of multiplication where

environmental factors strengthen or improve the opportunity for physiological potential to shape health-related behavior, reaction patterns, and tendencies for health-related behavior and related values[16,17]. Both these patterns and environmental factors can be 'triggers' for changes in health status.

Although it has been applied to several mental health studies regarding structural poverty and the ecological influence of society[18]; decline in physical health in rural areas which are predominantly inhabited by elderly people[19]; public health promotion in urban areas [20]; and child health consultations[21], the ecological model has not been studied explicitly in the treatment of children with special needs, one of which is children with ADHD and how they relate to the caregivers who look after them.

In relation to how the ecological model is applied to the health sector, there are several studies that link physical health and mental health to the environment in which individuals live. A human's mental and physical condition is dynamic over time, in contrast to the environment which is influenced by more rigid socio-cultural aspects. This causes humans to always be able to adapt to the environment they live in because going against the flow means increasing the frequency of stressors that arise—which in the end can make an individual's physical and mental condition worse. Therefore, the ecological model is considered necessary in considering the analysis of the relationship between individuals and the environment. Thus, the further research on how to overcome disparities in ADHD children's treatment can be provided in such broad scope and sequence.

Conclusion

The results of this study highlight the importance of addressing medication issues, when referring ADHD children with parents of different financial stability and demographic regions to mental health services. Both domains were highly related to parents' educational status. Health offerings are influenced by differences in demographic regions as well because demographic regions influence whether or not it is easy for parents to access healthcare or care offers from health professionals and facilities.

Contribution of authors

The first author Meilina Ratna Dianti created the pilot conceptual research blueprint, designed the research instrument and evaluation, and applied them to the research performance. The second author Ira Nurmala assisted in conceptual of research's fundamental performance and supported the guiding of writing the research report. The third author Lilis Sulistyorini added some of research advice regarding ADHD novelty in Indonesia and assisted in research article writing.

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