4th UUM International Qualitative Research Conference (QRC 2020)
1 – 3 December 2020, Virtual Conference

Behavioural Risk Factors of Non-communicable Diseases (NCDs) Determinant in the Context of an Orang Asli (Indigenous peoples): A Qualitative Study

Muslimah Ithnin[a], Norsham Juliana[b], Nadeeya 'Ayn Umaisara Mohamad Nor[c], Nadia Mohd Effendy[d] and Mohd Dzulkhairi Mohd Rani[c*]

[a]*Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia, Nilai, Malaysia.*
[b]*Department of Medical Science I, Faculty of Medicine and Health Sciences, Nilai, Malaysia.*
[c]*Department of Primary Care, Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia, Nilai, Malaysia.*
[d] *Department of Medical Science II, Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia, Nilai, Malaysia.*

Abstract

The emergence of non-communicable diseases (NCDs) among the minority Indigenous peoples of Peninsular Malaysia, known as the Orang Asli community, is concerning. The high prevalence of NCDs is related to the lifestyle transition occurring in this community. The present qualitative study explores the determinants factors of behavioural risk factors of NCDs among Orang Asli living in the fringe settlement category of Jelebu, Negeri Sembilan. Participants from an Orang Asli village were selected purposefully to take part in a semi-structured interview. The narratives data from 16 interviews were recorded, typed, and analysed according to four behavioural risk factors for NCDs include unhealthy diet, physical inactivity, tobacco use and harmful alcohol use that contribute to major NCDs. The interview continued until data saturation. Thematic analysis of the interview data revealed that good knowledge of individuals committed to a positive influence on healthy behaviour. Low awareness of the individual, environmental constraint, socioeconomic challenge and social characteristics are the negative determinants to behavioural risks of NCDs in Orang Asli. To successfully reduce the risks factor of NCDs among the vulnerable Orang Asli, it is essential to increase the awareness on a healthy lifestyle by looking into the individual eleents, cultural-environmental backgrounds, and economic challenges.

Keywords: in-depth, Malaysia, non-communicable diseases, Orang Asli, qualitative

1. INTRODUCTION

Non-communicable diseases (NCDs) are responsible for nearly 70 percent of deaths worldwide, and approximately 75 percent of all NCD-related deaths occur in low- and middle-income countries (WHO, 2013). In Malaysia, about 73 percent of deaths were caused by NCDs (IPH, 2015). With that, males and females, respectively, have 21 percent and 14 percent of premature death (WHO, 2018). In 2017, the World Health Organization (WHO) called for the reduction of premature deaths due to four NCDs, namely diabetes, cardiovascular diseases, cancers and chronic respiratory diseases. The primary strategy proposed to achieve the set goal is to reduce the common behavioural risk factors of non-communicable diseases which are highly prevalent.

The four behavioural risk factors for NCDs include unhealthy diet, physical inactivity, tobacco use and harmful alcohol use. The 2015 Global Burden of Diseases, Injuries, and Risk Factors Study examined linkages between risk factors and poor health literacy. Diet low in fruit and vegetables, contributed most to disability-adjusted life-year (DALY) rates, associated with three groups of disease: cardiovascular and circulatory diseases,

*Corresponding author. Tel.: +606-798 8000; Fax: +606-798 8204
E-mail: drdzulkahiri@usim.edu.my

cancers, and diabetes and urogenital, blood, and endocrine diseases. Decreased physical activity ultimately worsening levels of metabolic risks, with associated higher rates of cardiovascular diseases and cancers. Smoking was the second-leading risk factor for men in 2015, contributing to 9.6% of DALYs and a large proportion of male disease burden from cardiovascular and circulatory diseases, cancers, and chronic respiratory conditions. And for alcohol use was associated with 6.6% of disease burden primarily due to cirrhosis and other chronic liver diseases (Forouzanfar et al., 2016).

With the recognised unforeseen impact of these risk factors on the health of the individual, it is necessary to monitor the extent of these risk factors in the community and to plan strategies to reduce these risks to the same extent. Indigenous peoples, with no exception, are also part of the unfortunate health crisis. The indigenous peoples of Peninsular Malaysia, also known as Orang Asli (OA), are a minority population, accounting for about 0.6 percent of the total population of Malaysia (JAKOA, 2016). As this country's transition to urbanisation continues, NCDs and their risk factors will continue to increase in indigenous communities, including Orang Asli. Previous studies reported a high prevalence of NCDs particularly among the Orang Asli community living in urban and fringe categories (Phipps et al., 2015; Ashari et al., 2016; Aghakhanian et al., 2018).

In the studies on behavioural NCDs risk factors among Orang Asli, their practices on behavioural NCDs risk were as high as the major ethics in Malaysia (Poh et al., 2010; Ahmad et al., 2018). A study was conducted among the Orang Asli living in fringe category settlement by Ithnin et al. in 2020. In this study, 325 of Orang Asli participate in quantitative research to determine the level of behavioural NCDs practices. Findings from this study reported only 16.0% of the participants had good practices towards behavioural NCDs risks factor. There is also a worrying high number of participants with moderate and low knowledge towards NCDs with 22.5% and 51.7%, respectively.

Although quantitative studies give us useful and vital information about the prevalence of behavioural NCDs risk factors among NCDs, they are not based on the experience and deep understanding of individuals, as the factors influencing and affecting the behaviour among them. Behavioural risk factors appear as the four significant modifiable risk factors with the potential to reduce the current health inequalities (Ebenezer & Mariam Wallet Med, 2019). In addition to intensive strategies that target high-risk individuals, supporting healthy lifestyles among vulnerable populations is also an important aspect of delaying or,ideally, preventing the occurance of this chronic diseases. Nevertheless, a lack of cultural understanding has emerged as a potential barrier limiting Orang Asli communities from engaging in health intervention and strategies (Chandren et al., 2015).

Thus, this was an explanatory qualitative study from the previous quantitative research conducted in Jelebu, Negeri Sembilan by Ithnin et al., in 2020. It was hoped that this study would decolonise the narrative and support a more secure, qualitative forms of evidence, on the determinant factors associated with the high behavioural NCDS risks among the Orang Asli.

2. METHODS

2.1 Study design

A local explanatory study with a conventional thematic analysis approach was conducted to identify the NCDs behavioural risk factors of major NCDs accurately. In the present study, the researchers used individual interviews because, according to quantitative interviews, the majority of the Orang Asli preferred to provide information in a private environment. Therefore, data were collected through face-to-face interviews.

2.2 Recruitment and participants

One Orang Asli settlement was chosen as the qualitative study area from the 13 OA settlement at Jelebu, Negeri Sembilan. The village was purposely selected as it met the requirements that allowed the researcher to explore the possible effect of urbanisation and to understand the critical issues associated with NCDs. This research was carried out in an Orang Asli community settlement situated in Kampung Orang Asli Ulu Kelaka, Jelebu district, Negeri Sembilan. This village is categorised as a fringe category. The settlement which are within 5 kilometres from the main roads and has characteristics such as being neighbours to Malay villages and experienced marked social changes.

The participants were recruited in April 2019. The interview took place at the community hall of the Kampung Orang Asli Ulu Kelaka. It was essential to interview the participants in a place where they felt comfortable (Gill et al., 2008). Inclusion criteria required that participants were Orang Asli ethnicity, aged above 18 years and had stayed in the settlement for at least one year. Only participants staying longer than one year were included as they would be familiar with the environment of the settlement.

2.3 Data collection

Semi-structured interviews were undertaken, and participants were continually recruited until the researchers perceived that the dialogue had reached a data saturation point. The interview process consisted of three main sessions, namely, introduction, actual interview, and closing. In the introduction session, the participant was informed about the study details, and they were given assurance about the ethical principles applied in the study, such as anonymity and confidentiality. The format and content of semi-structured interviews for actual interviews were presented in Table I. At the end of the interview, and the interviewer thanked the participants for their time. They also asked if the participants have anything they would like to add. The interviews took about 30 to 50 minutes.

Table I. Format and content of semi-structured interviews.

Area	**Questions**
Fruit and vegetable intake	What is the effect of a lack of consumption of vegetables and fruits on health? Explain the factors that influence the consumption of fruits and vegetables socially, economically and access to you?
Physical activity	Can you explain in more detail the effects on health if you are physically active and inactive? Tell me about your experience in this village, in terms of challenges or difficulties and support in carrying out physical activities?
Tobacco use	How can smoking habits cause harm to health? In your opinion, what are the factors that influence a person to start smoking? In your opinion, what are the factors that can motivate a person to quit smoking?
Alcohol consumption	What are the negative effects and risks of alcohol consumption on health? Based on your observations, what are the factors influencing a person's excessive alcohol consumption?

2.4 Data Analysis

The in-depth interview was audio-recorded with participant consent, transcribed verbatim, and translated into English. Translations were verified by a second person fluent in the language. Transcripts were analysed using thematic content analysis. As coding proceeded, additional themes emerged. To assist in transferring and coding, the completed interviews were transcribed verbatim in Microsoft Office Word 2016 (Microsoft Corporation, United States) by the researcher.

After that, the researcher explored the data by reading through the interview transcripts and the researcher's notes. Qualitative data were analysed using a content-based thematic approach guided by the Graneheim & Lundman (2004) frameworks. The researcher explores the data by reading through the interview transcripts and the researcher's notes. Study themes and sub-themes were established after numerous readings of interviews and discussion transcripts. Qualitative information was then grouped into patterns and themes that addressed the objectives of the study (Puvenesvary et al., 2008). The data analysis was then presented in a narrative form using the quotations obtained from the interview transcription.

2.5 Ethical Consideration

This study is part of a PhD thesis in NCDs risks and health behaviour among the Orang Asli, which has been approved by the Malaysia MOH, Ethical committee from the Medical Research and Ethics Committee (MREC) (KKM/NIHSEC/P18-2338(11). Department of Orang Asli Development (JAKOA), the Malaysian government agency entrusted to oversee the affairs of the Orang Asli also granted permission to conduct the study.

3. RESULTS

A total of 16 adults aged 18 years and older from the Proto-Malay group of Orang Asli were participating in the in-depth interview session. No repeated interviews were performed as the research team found that the areas of enquiry had been adequately addressed in each case. The four categories of behavioural risk of NCDs explored in this study were fruit and vegetable intake, physical inactivity, smoking and alcohol consumption. The theme and determinant of knowledge and factor for each of the NCDs behaviour were presented in Table II. The themes were interrelated, with themes good knowledge on behavioural risks for positive influence in disease prevention. In contrast, themes factors were considered to be negatively influencing factors on the potential increased on the unhealthy behaviour prevalence.

Table II. The determinant for behavioural NCDS risk factors in Orang Asli

Behavioural risks	Positive factors	Negative factors
A. Fruit and vegetables intake	i. Knowledge on nutrition	i. Knowledge deficit ii. Reduction in crop production iii. Transportation limitation iv. Financial constraint
B. Physical activities	i. Knowledge on essential of physical activity	i. Low awareness ii. Lack of community facility iii. Time constraint
C. Smoking	i. Knowledge of adverse effect	i. Social influence ii. Individual desire iii. Addiction
D. Alcohol consumption	i. Knowledge on negative effect on health ii. Social problem	i. No awareness ii. Environmental influence iii. Stress management strategy iv. Addiction v. Money to spend

3.1 Inadequate fruit and vegetable intake

3.1.1 Facilitator: Knowledge on nutrition

Several participants talked about the importance of nutrition to health, with some mentioning the importance of a healthy diet and also reducing sweet and fat intakes. They also realized that a healthy diet contributes to a lower risk of obesity.

> *"For us to maintain good health, we need to take care of our food. Watch out for our diet. Reduce oily and fatty foods. We also need to reduce high cholesterol foods and sweet beverages. I do practically all of that. If we do not take care of our diet, then it will affect our health."*
>
> [Interviewee No. 15]

> *"We need to take care of our nutrition. If we overeat, then we can become overweight."*
>
> [Interviewee No. 12]

3.1.2 Barrier i. Knowledge deficit

However, there is a participant who did not know the relevance of nutrition to health.

> *"I do not know the factors that can give me good health. I do not know much about nutrition."*
>
> [Interviewee No. 1]

3.1.3 Barrier ii. Reduction in crop production

One of the barriers to the intake of vegetables was the reduction of crop production due to environmental factors such as animal disturbance and weather. And the fruit intake was also influenced by the seasonal factor. The

fruits available in the village have been limited. They could only eat fruit during the fruit season when a lot of local fruits, such as *rambutan* and *durian*, were available.

> *"If I need money, I will go and sell banana leaves. We planted tapioca on our farm before, but a pig came and destroyed all the plants."*
>
> [Interviewee No. 5]

> *"My food intake is still the same compared to before. I only eat tapioca leaves. But it is difficult to get traditional food like tapioca shoots because the weather is hot nowadays."*
>
> [Interviewee No.7]

> *"For fruits, we need to buy it. If it is not a fruit season, then there will be no fruits available in this village."*
>
> [Interviewee No. 12]

3.1.4 Barrier iii. Availability of transportation

Since some of them had to buy the vegetables or fruits from outside the village, they relied on transportation availability.

> *"There is a change in vegetable intake compared to previous years. Sometimes we get the vegetables from the plants in our farm. Tapioca shoots. Now it is harder because we need to buy it. I don't have transport or money. Sometimes I go out to buy only once a month."*
>
> [Interviewee No. 6]

> *"Last time when we want to eat vegetables, we can crop the vegetables like the tapioca or sweet potatoes from the farm. Now we don't do that. Now vegetables are bought from outside. Same with fish and chicken. We need to buy them. I need to wait for my husband to take me to buy vegetables or fruits outside the village."*
>
> [Interviewee No. 8]

3.1.5 Barrier iv. Financial constraint

Many of them also added they faced a restricted supply of vegetables and fruits for consumption due to financial constraints.

> "*I do buy fruit and vegetables. Sometimes there is no money to buy food, and sometimes we had only ten or twenty Ringgit to purchase food…… We need to ride the motorcycle to purchase food.*
>
> [Interviewee No. 10]

> *"To buy vegetables, we need to have money, it's difficult since I don't have money. It's also difficult to buy since the shop is quite far from the village. I only have a motorcycle as my mode of transportation."*
>
> [Interviewee No.7]

3.2 Physical inactivity

3.2.1 Facilitator. Essential of physical activity

There have been many comments on the effects of physical activity on health. Many agreed that active lifestyles are essential to health.

> *"We need to be physically active. Because if we are inactive, we will feel weak. We can also get painful joints. That is because we never did that activity. Because we are busy working. Working and workouts, there is a difference. It is also essential for us to get sweaty. At the same time, we can reduce our weight, so we do not become obese.*

[Interviewee No. 3]

"To maintain our health, we need to exercise. Every morning, we should go for rubber tapping andwalking. We need to be active. If we lack movement, it can cause health deterioration."

[Interviewee No.11]

3.2.2 Barrier i. Low knowledge on the importance of physical activities

However, in contrast to good knowledge of the essentials of physical activity, some participants had little awareness of the importance of physical activity in maintaining good health.

"I am not very sure about the importance of physical activity and how it can affect our health."

[Interviewee No.1]

"I wouldn't know the effects on health if we are physically active or inactive."

[Interviewee No.9]

3.2.3 Barrier ii. Lack of community facilities for physical activities

There was a limited number of facilities available for physical activity in the village. Many of them relied on domestic work and agricultural activity as part of their physical activities.

"There is a place to conduct physical activities, a small field. If adults like me wanted to do physical activities, then we take a short walk to walk to the orchard."

[Interviewee No.1]

"There is no place to do activities such as jogging. We only do gardening. If not, we wash laundry and do house chores as an exercise."

[Interviewee No. 13]

Participants also mention ittheir interest in conducting physical activities. If there is an available facility to conduct physical activities, then it would be beneficial for the villagers.

"I think if it is available, then it will be great. Because we never did it. We also want to do exercises like stretching and other health activities. I think gardening is not enough and we need to do other physical activities."

[Interviewee No.3]

3.2.4 Barrier iii.Time constraint

Another deterrent to adult physical activity was that they didn't have enough time to exercise because they had to look after their kids.

"It is not very easy to carry out physical activities as I have children, so I don't have much time. Last time I used to be quite active. It was easier back then to do anything I want. Nowadays, when I do a bit of work, I will quickly get tired."

[Interviewee No.6)]

"I never go for a jog. I only do walk. It is also challenging to go for a walk as I have a child at home."

[Interviewee No. 9]

3.3 Smoking behaviour

3.3.1 Facilitator. Negative impact of smoking behaviour

Many comments were made about smoking behaviour and their health effects. In overall, all of the participants had a good knowledge of smoking behaviour, and they agreed that this behaviour is unhealthy as it can affect health. There is also a participant who had additional awareness about the Quit Smoking Clinic provided by the government.

> *"It is also important to avoid unhealthy lifestyles such as smoking and drinking alcohol. If we prevent this smoking behaviour, then we can get a good health."*
>
> [Interviewee No. 2]

> *"Smoking is not good for health."*
>
> [Interviewee No. 3]

> *"I know there is a Quit Smoking Clinic available. I used to advise my husband to go to the Quit Smoking Clinic. But he doesn't want to go. For me, it depends on the individual if they really want to quit smoking."*
>
> [Interviewee No. 13]

3.3.2 Barrier i. Social influence

Several factors have influenced a person's decision to start smoking. According to the respondents, the factors included social characteristics, namely having friends who smoke and influence them to start smoking.

> *"Friends influence smoking habit. They can avoid it if they want to. Someone can quit smoking if they want to. If they are interested in stop smoking, they can do it."*
>
> [Interviewee No.2]

> *"I have forbidden my kids from smoking. I have also pinched my children who smoked. However, their friends influenced them. So, until now, they are still smoking."*
>
> [Interviewee No. 3]

3.3.3 Barrier ii. Individual desire

Besides that, another aspect associated with the probability of smoking was the individual traits with which they had the personal desire and actually wanted to try out specific behaviours.

> *"I do not know why people want to smoke. I think they might think that smoking seems like fun, therefore they want to try it out. At first, they might just want to try it out but soon it became a habit. Once that person has started smoking, it is difficult to quit smoking. Impossible."*
>
> [Interviewee No. 12]

3.3.4 Barrier iii. Addiction

While many knew about the adverse effects of smoking habits on health, other factors made quitting smoking difficult for them, including addiction to smoking behaviour.

> *"I did advise my family members to stop smoking but they did not listen. Once they started to smoke, they became addicted. Like what people say, smoking is like taking drugs. Once you take it, you will get addicted to it."*
>
> [Interviewee No.10]

> *"I have no idea with some of them (who smoke). But for my husband, he said he would be feeling dizzy if he stops smoking. I don't know what to say, so I just let him be."*
>
> [Interviewee No. 13]

3.4 Alcohol consumption

3.4.1 Facilitator i. Negative effect on health

Similar to smoking, alcohol consumption is also a risk factor for the disease. Many agreed that the harmful use of alcohol could have a negative effect on health.

> *"It is also important to avoid unhealthy lifestyles such as smoking and drinking alcohol. For alcohol drinks, if we take it, we will get drunk. If we take the drink for a longer time, then our kidneys and lungs will be damaged."*
>
> [Interviewee No. 2]

> *"Drinking alcohol can cause damage to the internal organs."*
>
> [Interviewee No. 15]

3.4.2 Facilitator ii. Social problems

In addition to the harmful health effect, the villagers also felt disturbed by alcohol consumption, because this behaviour caused a lot of social problems.

> *"Alcohol drinking not only causes you to get drunk. It also can cause people to like to fight. Even if we said the right thing, they would say that it is not the right thing."*
>
> [Interviewee No. 13]

> *"I have seen the youngsters in this village drink alcohol. For me, looking at the youngsters drinking alcohol makes me feel angry. When I see them get drunk, I feel angry as they have messed up. Sometimes they also get into a fight. But I won't help them. Leave them be. Looking for trouble when there is none, to begin with."*
>
> [Interviewee No. 14]

3.4.3 Barrier i. No awareness on the consequences of alcoholism

Even though the numbers of participants agree about the harmful effect of alcohol consumption, the is some of the participants did not know the negative impact of alcohol consumption on health.

> *"There is indeed someone that I know who drinks alcohol. I don't understand why they drink alcohol. I am also not sure of the negative effects of excessive alcohol intake to the body."*
>
> [Interviewee No. 6]

> *"I'm not sure why do people take alcoholic drinks. For me, there is no negative impact of drinking alcohol to health."*
>
> [Interviewee No.16]

3.4.4 Barrier ii. Environmental influence

There was mixed opinion on the factors that influenced alcohol consumption among the participants, for example, environmental influence from their friends.

> *"It was the influence of friends. If we tell them the negative effects of alcohol drinking, they will get angry at me."*
>
> [Interviewee No.1]

> *"My husband used to drink alcohol; his friends influenced him."*
>
> [Interviewee No. 4]

3.4.5 Barrier iii. Stress management strategy

Participants also commented that some Orang Asli use alcohol as a stress management strategy.

> *"Previously, my husband also takes alcohol because he was stressed out due to family and financial problems. In this village, some people are selling these drinks to the villagers. But he stopped taking alcoholic drinks already."*
>
> [Interviewee No. 4]

> *"I have seen the villagers drink alcohol. It seems that they have a problem at working place or at home, that's why they take alcohol."*
>
> [Interviewee No. 15]

3.4.6 Barrier iv. Alcohol addiction

The participant also reflected on the alcohol intake as being an individual's personal preference. As some of them disagreed, stress led to alcohol addiction.

> *"From my point of view, they drink alcohol, not because of stress or anything. They want to take the drink. Because if they did it due to stress, then drinking alcohol would not reduce the stress level. As first, they just wanted to try, then they became addicted to the drink."*
>
> [Interviewee No. 3]

3.4.7 Barrier v. Money to spend

As for some of the participants, they commented that some members of their families and villagers would use it to purchase alcoholic beverages when they had extra money to spend.

> *"I don't know the reason they take this alcoholic drink. Sometimes if they get money, they will use the money to buy alcoholic drinks. If they don't have money, then they would not buy it."*
>
> [Interviewee No. 14]

> *"My husband also occasionally takes the drink. He drinks because he has money. But not as frequent as the rest. Not until addicted."*
>
> [Interviewee No. 15]

4. DISCUSSION

The future burden of NCDs depends on numerous factors including the behavioural risk factors (e.g., fibers intake, physical inactivity, smoking and alcohol use) of individuals. Previous study reported behavioural risk factors, are an important factor that contributed to morbidity and premature death due to complications of NCDs (Devaux et al., 2020). Using qualitative analysis, this study sought to contextualise NCDS behavioural risks for Orang Asli as a precursor to investigating a potential way forward to address its disparate prevalence in that population. Similar to Malaysian general populations, Orang Asli is also at risk of developing major NCDs particularly those living infringe (Ahmad et al., 2018, Wong et al., 2018). What was distinctive about the findings of this study were insights into the importance of the relational aspects and the link between facilitating the knowledge factor for disease prevention behaviour and the barriers to healthy behaviour, including low awareness of the individual, environmental constraints, socio-economic challenges and social characteristics.

Comments by some Orang Ali in the qualitative study led to a more in-depth study of knowledge, factors of influence and barriers to behavioural risks among NCDs. Although they were aware of the four modifiable risk behaviours that cause health deterioration, their knowledge was very general and not specific to any disease. Understanding their barrier to adapt healthy lifestyle behaviour will allow for a strategic intervention that responds to the needs of the OA without diminishing its social and cultural values (Rahman, 2018).

Most participants agree that balanced and healthy eating behaviour is vital for health, with only one female

respondent being uncertain about nutrition. The previous research on diet and nutrition among Orang Asli is very relatively scarce. Only one quantitative study by Chong, Appannah & Sulaiman in 2019 found reported low nutritional knowledge among Orang Asli women living in the Kuala Langat district of Selangor. The Orang Asli communities are assumed to have a lower barrier in terms of fibre intake. However, this study found that, although the majority of Orang Asli in the village relied on the agricultural activity as a source of income, the availability and choices of vegetables were limited. The traditional daily vegetables consumed by Orang Asli include fern shoots, sweet potatoes, and tapioca and *ulam,* such as *petai* and *jering* have been locally grown or harvested in the forest. However, there is a limitation of crop production due to weather conditions and wild animal invasion of their farm. When these crop supplies were limited, they needed to get their vegetables from an outside source. But for some of them, it is an added burden due to financial constraints and transportation issues.

The Malaysian Dietary Guidelines recommended the consumption of at least two servings of fruit per day (IPH, 2015). This research has not quantified fruit consumption. But the fruit consumption among the Orang Asli was minimal from the interviews. Most of the fruits available in their villages were seasonal, and thus their daily intake was reduced. The previous study by Haemamalar, Zalilah & Neng Azhanie (2010) also reported that seasonal factor and too high fruit prices for both local and imported fruit on the market are contributing factors for low fibre diet among Orang Asli.

There is a shift in physical activity patterns among Orang Asli as a sedentary lifestyle has gradually replaced their active lives (Poh et al., 2010; Ithnin et al., 2020). Their knowledge of this physical activity was superficial, in which they thought that a lack of physical activity could only cause obesity and weaken their body. Several participants did not know the importance of the physical activity to health. Many of them have stated in this study that they have a limitation in the conduct of physical activities. The barrier identified in this study for doing physical activities was lack of physical activity facility, environmental influence and also time constraints. A study by Saimon et al. also concluded in 2015 a similar barrier that affects the involvement in physical activity among indigenous communities. Women in this study were more likely to face more obstacles to exercise due to lack of amenities, such as walkways and parks near their homes, and lack of time because they were busy managing their families and homes.

About smoking, many of the Orang Asli knew that smoking is unhealthy and can contribute to diseases. Only one respondent aware of the Quit Smoking Clinic listed in the National Quit Smoking Program by the Division of Disease Control, Ministry of Health Malaysia (2015). This program offers assistance to smokers to discontinue tobacco use and ultimately quit smoking. However, despite the Malaysian government's active campaign to reduce smoking prevalence in Malaysia, Orang Asli appeared to be neglected due to a lack of education and intervention programs targeted at specific populations (Hum, Hsien & Nantha, 2016). Smoking behaviour was a typical activity, especially among Orang Asli (Ahmad et al., 2018). While most of the Orang Asli interviewees understood the danger of smoking to their health, they nevertheless found it difficult to encourage their family members to stop smoking. It was due to peer influence, personal interest, nicotine addiction, and lack of motivation to stop smoking.

Even though most of them knew about the negative effect of excessive alcohol consumption, several participants did not aware of the adverse impact of this behaviour. For those who knew, they stated that alcohol could be detrimental to health because excessive intake could lead to intoxication and death. Furthermore, alcohol consumption had also caused social problems among the Orang Asli. Our study showed that increased alcohol intake by males added considerable stress and anxiety to the villagers. Similar findings were reported in a previous study performed among Orang Asli at a resettlement villager in Selangor (Swainson & McGregor, 2008; Karim & Hashim, 2012). The environmental difference in terms of increased urban-rural interaction had also increased the alcoholism behaviour among Orang Asli. From the interviews, the main driving factors for this behaviour were peer influence, stress, individual desire, and extra money to spend. In previous years, traditional alcoholic drinks were only consumed during festive celebrations (Ali, Shamsuddin & Khalid, 1991). However, in recent years, the modernisation that resulted from the Orang Asli resettlement programmes has fuelled the alcohol problems in these communities. Due to the affordability and availability of alcoholic beverages near their settlements, some of the Orang Asli were spending a lot of their money on the drinks (Swainson & McGregor, 2008; Karim & Hashim, 2012; Gill, Rosnon & Redzuan, 2010).

There were some limitations to this study. Since the interviews were face-to-face, the participants could have received socially acceptable answers. Although the researcher used an in-depth interview approach in this study and permitted definitions to be derived directly from the results, it was possible that the views of the

interviewees did not cover all the factors influencing the behavioural risk determinants of NCDs. Thus, to remove this restriction, the interviews persisted until the data became saturated. This study is also limited in that we have confined our sphere of discussion to the chosen Orang Asli group residing in the fringe settlement of rural areas. Since Orang Asli are not homogeneous, inferences should be made only in the light of future research with comparable populations. The other group of Orang Asli may have had specific facilitation and obstacles to the determinants of the behavioural risk factor for NCDs.

The strengths of this report include the results of the study, which will be very useful in setting the Orang Asli intervention goals, as well as public health policies. In the present research, the awareness and attitudes of individuals and societies towards diseases are critical to health promotion. Studies that explicitly focus on dietary, behavioural and chronic disease awareness among Orang Asli are suggested as a result of rapid nutritional change and lifestyle transformation among Orang Asli communities. This work may provide valuable knowledge to reduce the risk that contributes to the increased prevalence of metabolic risks and NCDs.

Taking into account the social, capital and cultural perspectives, strategies and interventions to monitor NCDs shall be effective and sustainable. A variety of new approaches have been implemented in recent years to increase the uptake of healthy behaviour. By adopting modern technology, it can be empowering, as it serves as a bragging factor and fulfills the purpose to improve healthy behaviour among OAs (Walid et al., 2017). In a study of Indigenous Australian people, the use of digital health trackers enhanced physical activity and improved health awareness of research participants (Maxwell et al., 2019). Exercise aids such as pedometers and cell phone apps can also be integrated into lifestyle behavioural intervention programmes intended for NCDs prevention.

Public health strategies aimed at minimising behavioural risk factors for NCDs are also crucial for the prevention of NCDs. Policies beyond the health sector, such as education, housing, the environment, agriculture and transport, are also beneficial to improve the living environment of the vulnerable population of Orang Asli and thus increase the health of the community.

5. CONCLUSION

The results of the present study indicated that behavioural risks factors of NCDs in Orang Asli are a multi-factual phenomenon. Despite the common misunderstanding that the Orang Asli is facing no barrier in achieving a healthy lifestyle, our qualitative methodology clarified that the also facing obstacle in conducting a healthy lifestyle. In addition to the typical challenges to the practice and implementation of healthy lifestyle behaviours, such as low disease understanding, environmental pressures, socio-economic conditions and social features often play an essential role as a factor leading to unhealthy risk behaviours of NCDs. Since it is unlikely that a 'fits for all' approach to health interventions can be taken mainly in the Orang Asli communities, the control and prevention strategies of the NCDs in Malaysia should take the Orang Asli viewpoint into account. With continuous health education to increased knowledge and sustained effort, there is also scope for far more actions to support healthy behaviours at the community level for the prevention of chronic diseases.

STATEMENT ON CONFLICT OF INTEREST

The authors have no conflicts of interest that are directly relevant to the content of this research.

ACKNOWLEDGEMENTS

The authors would like to express our gratitude to the participants for their sincere cooperation in this study. Authors also would like to thank the Health Department of Jelebu and The Department of Orang Asli Development (JAKOA), for their assistance. We want to acknowledge the Director-General of Health Malaysia for the permission granted to publish this article. This study was funded by PPPI/UGC_0119/FPSK/ 051000/13219 grant.

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