

**1. Purpose:** The purpose of this study is to demonstrate how to prevent the occurrence of *hikikomori* (social withdrawal) and how to provide support in relation to it. In order to achieve this purpose, (1) a case control study was conducted with the purpose of clarifying the risk factors for the occurrence of *hikikomori*, and (2) a case study was conducted to show measures that can connect individuals experiencing *hikikomori* to support at an early stage, with the goal of clarifying the support desired by those affected by *hikikomori*.

**2. Definition of individuals who have experienced *hikikomori* used within this study:** Individuals who have experienced *hikikomori* were defined as: 'People who have had an experience of avoiding social participation as a result of multiple factors and who have remained, as a rule, in their home for a period of six months or longer, including cases where the individual in question has left their house without interpersonal interaction.' Those who (1) had a diagnosis of schizophrenia, (2) had a diagnosis of some kind of disability since before they became socially withdrawn, and/or (3) started to become socially withdrawn when they were aged 40 or older were excluded from this definition.

**3. Ethical considerations:** This study was conducted with the approval of the Ethics Committee of the Graduate School of Nursing and Social Services of the Health Sciences University of Hokkaido (approval numbers: 16N033035 and 16N040039).

#### **4. Case Control Study**

##### **1) Method**

**(1) Survey Participants, Period, and Method:** Structured interviews were conducted using questionnaires filled in by the interviewer from April 2018 to November 2019 with a total of 45 participants who were categorised into two groups: those who had experienced *hikikomori* and had used *hikikomori* support organisations in Hokkaido (the 'case group'); and those who had not experienced *hikikomori* (the 'control group').

**(2) Survey Items:** The survey items comprised a total of 170 items, each of which was applied separately to the participant's experiences at primary school, junior high school, and high school: (1) 15 items on their experience of school, including whether they were a victim of bullying at school; (2) five items on their relationship with their family and their experience at home, including whether they felt they had a place they belonged; (3) nine items on their relationship with their father (e.g. the frequency of conversation with their father); (4) nine items on their relationship with their mother (e.g. the frequency of conversation with their mother); (5) eight items on their experience of their local community, including whether they felt they had a place they belonged; (6) 11 items on their lifestyle.

**(3) Analysis Method:** Conditional logistic regression analysis was performed for each region as a univariate analysis, with the presence or absence of *hikikomori* experience as the objective variable and other variables as explanatory variables. A conditional logistic regression analysis was then performed as a multivariate analysis using items that were found to be significant in each region in the univariate analysis.

**2) Results:** The participants were 29 men and 16 women, with a mean age of  $30.5 \pm 7.7$  years in the case group, and  $30.0 \pm 7.2$  years in the control group. The age at which participants first

experienced *hikikomori* was  $17.7 \pm 6.1$  years, and the total period of social withdrawal was  $6.0 \pm 5.3$  years. The incidence of autism spectrum disorders was significantly higher in the control group than in the case group, and the rate of single-mother households was also higher in the control group.

Items that were independently related regarding participants' experiences at primary school were: Five items relating to experience at school, including 'I didn't have a place where I felt I belonged'; four items relating to experience at home, including 'I had a bad relationship with my parents'; three items on their relationship with their father, including 'I had a bad relationship with my father'; four items on their experience of their local community, including 'I didn't have any friends outside of school'; and two items on their lifestyle, including 'I wasn't able to maintain a balanced diet when I was experiencing distress'.

Items that were independently related regarding participants' experiences at junior high school were: Eight items relating to experience at school, including 'I didn't have a place where I felt I belonged'; two items relating to experience at home, including 'I didn't talk with my parents much'; three items on their relationship with their father, including 'I had a bad relationship with my father'; two items on their relationship with their mother, including 'my mother didn't help me when I was troubled'; four items on their experience of their local community, including 'I didn't go to cram school'; and six items on their lifestyle, including 'I ate a meal with my family 0 to 1 times per day'.

Items that were independently related regarding participants' experiences at high school were: Three items relating to experience at school, including 'I didn't have a place where I felt I belonged'; one item on their relationship with their father, 'my father didn't help me when I was troubled'; two items on their experience of their local community, including 'I didn't have any friends outside of school'; and one item on their lifestyle, 'I had more worries than other people'.

## **5. Case Studies based on the Interviews**

### **1) Method**

**(1) Participants and Method:** An interview survey was conducted using semi-structured interviews, targeting only members of the case group from among the participants of the case control study. The survey was conducted at the same time as the case control study. The analysis was used to determine participants who had provided sufficient narrative for inclusion. The number of participants who were included in the analysis was: (1) 10 participants who were included in relation to their narratives regarding their experiences of recovering from *hikikomori*, and (2) 23 participants whose narratives related to the support desired by those who have experienced *hikikomori*.

**(1) Survey Items:** The survey items related to (1) factors that had supported participants in recovering from *hikikomori*, and (2) the support desired by those who have experienced *hikikomori*.

**(2) Analysis Method:** A transcript was created based on the recorded audio obtained in the interviews. The researchers read through the transcript repeatedly, extracted the parts that

corresponded to each of the interview items, and categorised content relating to support based on the situations described by participants included in the analysis. Thus, a qualitative inductive study design was used.

## **2) Results of the Case Studies**

**(1) Factors that supported participants in recovering from *hikikomori*:** These factors were classified into the following six categories, each of which had complex interrelationships with the other categories: emergence of a sense of guilt about being socially withdrawn; increased sense of crisis about being socially withdrawn; feeling uncomfortable at home; increased motivation to go out; support from others with recovery; regaining self-confidence through interactions with others who do not reject them.

**(2) Support desired by those who have experienced *hikikomori*:** This support was classified into the following three points: being provided with support information that is easy to access; having supportive human relationships; encountering people and situations that encourage internal change.

**6. Discussion:** The present research identified the following risk factors for individuals becoming socially withdrawn: (1) not having anyone they could rely on at school, at home, or in the community; (2) not having a place they felt they belonged at school or in the community, (3) feeling that they had more worries than other people, and (4) undiagnosed autism spectrum disorders. No consistent association was found with experiences of bullying at school. The above results suggest that the following factors are significant in preventing *hikikomori*: (1) creating approachable environments and places within schools and communities in which people have others that they feel they can rely on and where they feel that they belong, and (2) creating an environment that facilitates the detection of autism spectrum disorders at an early stage.

In order to provide support at an early stage for those who are socially withdrawn, it is important for family members and supporters to carefully observe affected individuals, and to timely provide them with support information and encourage them to use support organisations. This should be done when the affected individual experiences psychological changes such as feeling a sense of crisis or guilt about their current situation. In addition, in order to provide support information that is easily accessible to affected individuals, it is necessary to examine the ways in which support information is currently provided and analyse how those who have experienced *hikikomori* access support information. It is also necessary to construct systems that make it easy for family members and others to obtain information.

This study was effective in conducting a case control study of *hikikomori*, something which has not been attempted in previous studies, and obtained significant evidence on the causes of *hikikomori*. This study was also effective in obtaining new findings regarding factors that support individuals in recovering from *hikikomori* and the support desired by those affected, based on narratives from a large number of affected individuals. In particular, there were no prior studies that had identified the influence that autism spectrum disorders, single-mother households, and family environments with absent fathers have on the occurrence of *hikikomori*

using quantitative methods; thus, the findings of the present study can be seen as novel in this regard.

Future research will need to consider methods of raising awareness, for example by creating a simple checklist, so that community residents can understand the findings of this research and utilise them effectively.