Self-reported Seasonal Symptoms and Diseases and Primary Healthcare Utilization Among Rural Elderly Women in Sylhet District, Bangladesh

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Abstract: The physical health and conditions of elderly people are challenged by the adverse effects of seasonal variations in sub-tropical countries, including Bangladesh. Research to date does not feature the risk of seasonal changes for primary healthcare infrastructures and practices in supporting elderly women's care, especially in rural areas. This study aims to identify the health effects of seasonal variations that place increased risk of symptoms and diseases on rural elderly women, and to explore the determinants associated with the women's use of healthcare locally. Using a mixed-methods approach, audio-recorded semi-structured interviews including a short survey with sixty-five rural elderly women and eleven healthcare professionals were conducted. Quantitative data were analyzed in SPSS, and a thematic analysis of the qualitative data was facilitated by NVivo. Self-reported health history by rural elderly women identified the prevalence of three major seasonal symptoms: headache (28/43.1%), digestive disorder (27/41.5%), and physical pain (27/41.5%). The prevalence of three symptoms such as nausea, headache and digestive disorder varied significantly \(^p<0.05\) across the study villages. Of the women, the age group (60–70 years) recorded the highest number of cases (20), followed by age group (71–80 years/15), where the number of cases significantly varied across three seasons \(^p=0.021\). While 78.5% and 55.4% reported one and two symptoms/diseases respectively, the community clinic visits differed significantly \(^p=0.011\) among the seasons. The utilization of primary healthcare was low, and marginalization in using healthcare was underpinned by the health system, the poor living conditions of the women, and their reluctance to seek treatment. The findings suggest a need for policy solutions in promoting preventive measures and treatments by strengthening local clinics and on-going health education and training of staff and elderly women.

Keywords: seasonal variations, health effects, primary healthcare, determinants, rural elderly women.

Introduction

Primary healthcare is expected to be the first place of visits by elderly people in Bangladesh because of their symptoms and diseases, limited mobility, and a lack of geriatric services. The rural primary healthcare of the country is comprised of the Upazila Health Complex, the Union Health & Family Welfare Centers, and Community Clinics [1]. At the Upazila level, 460 health complexes, comprised of 31-bed inpatient facilities with outpatient services, provide primary and secondary care for a population of 400,000 people [2, 3]. There are 3,275 Union Health & Family Welfare Centers, which cover 30,000 people in each union, and 14,000 community clinics have been established to support every population of 6,000 people across rural

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About 70% of the total elderly women (i.e., 7.4 million) in Bangladesh live in rural and remote regions, and two-thirds of rural elderly women (REW) experience symptoms and diseases [5]. Many of them experience symptoms for a longer period than any other population group, leading to a high rate of preventable and premature deaths every year [3, 5]. Literature indicates seasonal outbursts as the main contributor to an increasing prevalence of symptoms and diseases among the REW [5]. The key drivers of seasonal symptoms and diseases include climate change [e.g., temperature, precipitation], abiotic environment [e.g., salinity in water], co-infections, and vector seasonality [5].

Bangladesh has been experiencing a rapid climate change that affects seasonal patterns through the lengthening of the major seasons (summer, rainy and winter) and the crossing of weather thresholds that underlie seasonal outbursts [6, 7]. There is a growing body of research in Bangladesh on elderly peoples’ health and healthcare, nutrition assessment, health determinants, and socioeconomic circumstances [8–12]. To date, no research has been conducted to identify the effects of seasonal variations on the prevalence of symptoms and diseases, especially for REW living in North-eastern Bangladesh, a major agricultural region of the country. The climate of the North-eastern part of Bangladesh is generally tropical, including summer, rainy, and winter seasons [13, 14]. The summer season lasts from March to May and, the long rainy season lasts from the middle of May to October. While the average maximum temperature in the summer season is 37/38 °C (99/100 °F), the average monthly rainfall is 250 millimeters (10 inches) in the rainy season, due to summer monsoons [13]. From the late summer to the rainy season, a number of thunderstorms come from the Himalayas that bring rainfall in combination with hail and wind gusts. In addition, due to the placement of the country at the huge Ganges-Brahmaputra Delta, there is high chance of exposure to floods and storm surges when cyclones hit the Bay of Bengal [14]. The winter begins in December and is characterized by warm days, followed by a decrease of 7°C. The weather of the seasons in North-eastern region has been crossing the thresholds every year because of the country’s climate change as well as unplanned industrialization that leads to air and water pollution [13, 14]. Current literature on the physical health conditions of REW in the region identifies a prevalence of several symptoms and/or diseases due to seasonal variations, such as cold fever, headache, pain, diarrhea, nausea, eating disorders and breathing problems [3, 13]. However, the use of primary healthcare by the REW is estimated to be as low as 3% [2].

Most REW in the North-eastern region of Bangladesh live in poor socioeconomic circumstances and have a strong connection to cultural traditions, which are dominant in shaping healthcare utilization and, therefore, are predisposing determinants of seasonal symptoms and diseases [15, 16]. This is worsened by a lack of clinical resources and services at the local level for diagnosis and treatment [3, 16]. The impact of seasonal variations on elderly women and men’s health has been reported in some studies [17–20], but data on the seasonal symptoms and diseases for REW and their healthcare access is rarely available in most low- and lower middle-income countries, including Bangladesh [13, 15]. This study, therefore, aimed to capture the prevalence of seasonal symptoms and/or diseases among the REW in the North-eastern part of Bangladesh, and to explore the determinants of the women’s use of primary healthcare.

**Methods**

A mixed-methods study [qualitative part is dominant] involving a short demographic survey, self-reported health history and qualitative interviews on the primary healthcare utilization was conducted over a three-month period (June to September 2015) at three villages in the Sylhet district. Those three villages have a population of about 4,930 inhabitants and were chosen after consultation with the Sylhet Civil Surgeon and the Sadar Upazila Health Officer because they were located apart from urban areas, were the most populous areas of the union, and are representative of the seasonal variations of North-eastern region of the country.

After getting the permission of the Directorate General of Health Services, Bangladesh and subsequent ethics approval from the Research Ethics Committee at the University (Project No. 6705), the Sadar Upazila Health Officer was approached to recruit healthcare
professionals working in Sylhet district primary healthcare centers. Eleven healthcare professionals showed interest in participating. The inclusion criteria in recruiting professionals were that they: worked in Sylhet Sadar Upazila; had experience in providing care to REW living in the Tuker Bazar Union; and were willing to participate in a face-to-face audiotaped interview. One Public Health Inspector was involved in organizing yard-gatherings with REW at three villages, which resulted in 65 REW participants at two phases. Rural elderly women were recruited if they were 60 years old or over, living in the selected villages, and agreed to share their experience. After obtaining consent from the participants, audio-recorded semi-structured interviews were conducted. Self-reported demographic information and health history were collected relating to their age, education, income, relationships, symptoms and diseases over the 12-month period of June, 2014 to May, 2015. Interview questions and prompts to the staff and REW were related to primary healthcare utilization, health services and the women’s socioeconomic and cultural circumstances.

Quantitative data were analyzed using SPSS 25.0 (IBM, New York), and descriptive statistics were used to present the prevalence of seasonal diseases and comorbid conditions, and the differences in proportions were assessed by Chi-Square test (p-value less than .05 was considered statistically significant). A thematic analysis was conducted in qualitative data coding and analysis [21, 22], and Nvivo software was used to facilitate the analysis. Analysis started with a familiarity of the data and automated coding. At initial coding, all potentially applicable determinants, actions and meanings were labeled as open codes. A focused coding was then conducted in accordance with the research objectives, and the codes were clustered into nodes. The researcher reviewed the nodes/clusters in relation to the audios and transcripts to search for candidate themes and sub-themes in order to name them.

Results

Prevalence of seasonal diseases and comorbid conditions

The demographic characteristics and the overall prevalence of seasonal symptoms and diseases among the REW participants are presented in Table 1 and 2. The mean age of the REW was 72 years (range from 60 to 100 years). Of the 65 REW examined in the three villages, 84.6% had no formal education, with 48 REW (73.8%) having no income at all. The major seasonal symptoms/diseases identified in the self-reported health history by the REW included cold fever (24/36.9%), diarrhea (18/27.7%), nausea (24/36.9%), headache (28/43.1%), digestive disorder (27/41.5%) and physical pain (27/41.5%). The prevalence of three symptoms such as nausea, headache and digestive disorder varied significantly (p<0.05) across the three villages.

Among the REW, the age group (60–70 years) recorded the highest number of cases (20), followed by age group (71–80 years/15), age group (81–90 years/8) and age group (91–100 years/4). The prevalence of cases significantly differed for the 71–80 age group across the three seasons (p<0.05). Five symptoms documented the maximum number of cases respectively: headache (28), digestive disorder (27), physical pain (27), cold fever (24) and nausea (24). Diarrhea was found to be more prevalent in summers than in the rainy and winter seasons, with statistical significance (p<0.05), and cold fever and headache also differed significantly during the seasons. Of the women, 78.5% (51) reported one seasonal symptom/disease, 55.4% (36) reported at least two symptoms/diseases, and 18.46% (12) experienced at least three symptoms/diseases over the seasons in the months determined. In addition, there was significant variation in the prevalence of one symptom (p<0.05) between seasons. However, the overall utilization of primary healthcare centers was low, with 41 (63.1%) visits recorded for local pharmacies; 22 (33.8%) for community clinics, 8 (12.3%) for the Union Health & Family Welfare Centre, and 0 (0%) for the Upazila Health Complex. There was a significant difference in the community clinic visits (p<0.05), in which highest number of visits was recorded in summer.

Determinant of REW’s primary healthcare utilization

Three major themes and several sub-themes emerged from the analysis of the views of the health staff and REW in relation to the determinants of the women’s access to primary healthcare: (i) availability of healthcare support, (ii) ability to pay, and (iii) reluctance to seek treatment.
Table 1. Demographic characteristics of REW and distribution of seasonal symptoms/diseases

| Demography and prevalence of seasonal symptoms/diseases | Village 1 (%) | Village 2 (%) | Village 3 (%) | Total estimated weight (Prevalence) (%) | p value |
|---------------------------------------------------------|---------------|---------------|---------------|----------------------------------------|--------|
| Age (Mean, SD)                                          | 72 (10.21)    |               |               |                                        |        |
| Education                                               |               |               |               |                                        |        |
| No formal education                                     | 20 (80)       | 18 (90)       | 17 (85)       | 55 (84.6)                              | 0.501  |
| Primary School (year 1 – year 5)                       | 3 (12)        | 1 (5)         | 2 (10)        | 6 (9.23)                               | 0.731  |
| Secondary School (year 6 – 10)                         | 2 (8)         | 1 (5)         | 1 (5)         | 4 (6.2)                                | 0.709  |
| Higher Secondary School (year 11 – 12)                  | 0 (0)         | 0 (0)         | 0 (0)         | 0 (0)                                  |        |
| Bachelor’s or higher                                    | 0 (0)         | 0 (0)         | 0 (0)         | 0 (0)                                  |        |
| Level of income                                         |               |               |               |                                        |        |
| No income                                               | 18 (72)       | 15 (75)       | 15 (75)       | 48 (73.8)                              | 0.625  |
| BDT 0 – 1000                                           | 2 (8)         | 3 (15)        | 2 (0.0)       | 7 (10.8)                               | 0.121  |
| BDT 1001 – 2000                                        | 3 (12)        | 2 (10)        | 3 (15)        | 8 (12.3)                               | 0.620  |
| BDT 2001 or more (%4)                                   | 2 (8)         | 0 (0)         | 0 (0)         | 2 (3.1)                                |        |
| Total                                                   | 25 (38.46)    | 20 (30.77)    | 20 (30.77)    | 65 (100)                               |        |

Cases and prevalence of seasonal symptoms/diseases in study villages

| Symptoms/diseases                                      | Summer (%) | Rainy (%) | Winter (%) | p value |
|---------------------------------------------------------|------------|-----------|------------|--------|
| Influenza                                               | 4 (16)     | 3 (15)    | 3 (15)     | 12 (18.5) | 0.511  |
| Skin problem                                            | 1 (4)      | 1 (5)     | 0 (0)      | 2 (3.1)  | Not Calculated ** |
| Cold fever                                              | 11 (44)    | 6 (30)    | 7 (35)     | 24 (36.9) | 0.502  |
| Diarrhea                                                | 8 (32)     | 5 (25)    | 6 (30)     | 18 (27.7) | 0.502  |
| Nausea                                                  | 12 (48)    | 8 (40)    | 4 (20)     | 24 (36.9) | 0.012* |
| Headache                                                | 13 (52)    | 6 (30)    | 9 (45)     | 28 (43.1) | 0.015* |
| Digestive disorder                                      | 12 (48)    | 8 (40)    | 7 (35)     | 27 (41.5) | 0.025* |
| Breathing problem                                       | 3 (12)     | 0 (0)     | 4 (20)     | 7 (10.8)  | Not Calculated ** |
| Severe physical pain                                    | 11 (44)    | 8 (40)    | 8 (40)     | 27 (41.5) | 0.101  |

*p-value less than .05 was considered statistically significant, **p-value was not calculated due to small number of participants/cases, REW: rural elderly women, BDT: Bangladeshi Taka.

Table 2. Prevalence rate of symptoms/diseases and primary care utilization during three different seasons

| Prevalence rate of symptoms/diseases and primary care utilization | Summer (%) | Rainy (%) | Winter (%) | p value |
|------------------------------------------------------------------|------------|-----------|------------|--------|
| Participants identified in age groups (years) with seasonal symptoms/diseases |            |           |            |        |
| 60 – 70 (n=20 out of 25 participants)                            | 8 (40)     | 6 (30)    | 6 (30)     | 0.110  |
| 71 – 80 (n=15 out of 24 participants)                            | 8 (53.3)   | 4 (26.7)  | 3 (20)     | 0.021* |
| 81 – 90 (n=8 out of 9 participants)                              | 3 (37.5)   | 3 (37.5)  | 2 (25)     | 0.594  |
| 91 – 100 (n=4 out of 4 participants)                             | 2 (50)     | 1 (25)    | 1 (25)     | Not Calculated ** |

Diseases according to season

| Symptoms/diseases                                      | Summer (%) | Rainy (%) | Winter (%) | p value |
|---------------------------------------------------------|------------|-----------|------------|--------|
| Influenza                                               | 0 (0)      | 4 (33)    | 8 (66.7)   | Not Calculated ** |
| Skin problem                                            | 0 (0)      | 2 (100)   | 0 (0)      | Not Calculated ** |
| Cold fever                                              | 6 (25)     | 11 (45.8) | 7 (29.2)   | 0.018* |
| Diarrhea (n=18)                                         | 11 (61.1)  | 6 (33.3)  | 1 (8.3)    | 0.008* |
| Nausea (n=24)                                           | 8 (33.3)   | 9 (37.5)  | 7 (29.2)   | 0.679  |
| Headache (n=28)                                         | 14 (50)    | 11 (39.3) | 3 (10.71)  | 0.013* |
| Digestive disorder (n=27)                               | 9 (33.3)   | 10 (37)   | 8 (29.6)   | 0.872  |
| Breathing problem (n=7)                                  | 2 (28.6)   | 5 (71.4)  | 0 (0)      | Not Calculated ** |
| Severe physical pain (n=27)                              | 9 (34)     | 8 (29)    | 10 (37)    | 0.681  |

No. of symptoms/diseases according to season

| Symptoms/diseases                                      | Summer (%) | Rainy (%) | Winter (%) | p value |
|---------------------------------------------------------|------------|-----------|------------|--------|
| One [n=51 (78.5%)]                                     | 26 (51)    | 17 (33.3) | 8 (15.7)   | 0.010* |
| Two [n=36 (55.4%)]                                     | 11 (30.6)  | 11 (30.6) | 14 (38.8)  | 0.101  |
| Three [n=12 (18.46%)]                                   | 4 (33.3)   | 3 (25)    | 5 (41.67)  | Not Calculated ** |
| More than three [n=6 (9.2%)]                            | 2 (33.3)   | 3 (50)    | 1 (16.7)   | Not Calculated ** |

No. of visits to primary healthcare centers

| Symptoms/diseases                                      | Summer (%) | Rainy (%) | Winter (%) | p value |
|---------------------------------------------------------|------------|-----------|------------|--------|
| One [n=51 (78.5%)]                                     | 26 (51)    | 17 (33.3) | 8 (15.7)   | 0.010* |
| Two [n=36 (55.4%)]                                     | 11 (30.6)  | 11 (30.6) | 14 (38.8)  | 0.101  |
| Three [n=12 (18.46%)]                                   | 4 (33.3)   | 3 (25)    | 5 (41.67)  | Not Calculated ** |
| More than three [n=6 (9.2%)]                            | 2 (33.3)   | 3 (50)    | 1 (16.7)   | Not Calculated ** |

*p-value less than .05 was considered statistically significant, **p-value was not calculated due to small number of participants/cases.
Availability of healthcare support

The participants described the primary healthcare system in terms of resources, professional knowledge and skills of the staff, waiting period in seeking care, and patient-staff relationships.

According to most of the staff and REW, there was a shortage of doctors, nurses and health assistants, and this shortage was also related by REW to an absence of clinicians. REW found only one medically trained doctor practicing in union clinics for one day per week, and the nurse position was identified as being vacant.

We do not have enough staff. Though one staff is responsible for providing healthcare support for 4,000 people nationally, I am providing support for more than 12,000 people in this area. ... It is difficult for me to manage such a big population. We cannot provide enough support due to inadequate staff. I also have to visit community clinics (Staff 2).

There is a doctor in Temokhi. ... When I feel very sick, I go to the doctor who diagnoses me and gives me medications, but it is hard to visit him every day. I do not go to hospitals. Hospitals are far away from here. I cannot go there by walking (REW 23).

This shortage of staff in combination with a lack of supply of equipment and medications resulted in a lack of care support for REW.

A yearly allocation of medical equipment and a monthly allocation of medications were identified in the discussion by the staff, but this supply was inadequate, as explained by the staff and REW as follows:

... we cannot conduct any tests for the patients. We do not have equipment even at Upazila level. If they require CT scan or MRI, they must go to district hospitals in the city. There is also a lack of medication supply in the local healthcare centers (Staff 11).

I was waiting for three days for my bone test. I went to the hospital every day and they were asking me to come next day at each time, as the test equipment was not available (REW 24).

Medications are available in the pharmacies, not in the union clinics. When I visited a local clinic, the doctor prescribed me several medications and suggested me to buy these from a local pharmacy. I heard that the doctor I visited was the owner of this pharmacy (REW 16).

A scarcity of equipment and medications discouraged the women from accessing clinics locally, and this problem was furthered by a lack of medical education and training of the staff.

Both staff and REW stated that there was no geriatric service in the union clinics, where care is mainly provided to pregnant women and children. According to the staff, most of the clinicians and health assistants came into the healthcare sector without proper geriatric education and training. In addition, on-going training and information sessions were related by the staff to maternal and child health:

I have participated in a few basic training courses on Expanded Program on Immunization (EPI) and maternal healthcare. I did not receive any training for elderly women’s healthcare. I did not even hear about any training on elderly women’s healthcare services (Staff 3).

There are no public healthcare facilities in our village. I must go a long way to visit doctors and get medications. There are a few private medicals, but they are located outside this village (REW 5).

Thus, the lack of gerontology knowledge by the staff was described by the REW in relation to the unavailability of services in the region, which was also related to lengthy waiting periods in out-patients services.

While a majority of the staff blamed the burden of a large number of patients for causing lengthy waiting times in providing treatments, the REW described the impact on their health of the long waiting times in the clinics.

There is a huge pressure of patients in the clinics. We can provide support for only a small number of people. There are 58,000 inhabitants in this union, and we provide services from 8.00 am to 4.00 pm. In the last month, we were able to provide services to 456 people of the union (Staff 11).

I tried to get treatment early, but they did not come to see me. ... I told them that I cannot move and requested them to give me early treatment, but it did not work (REW 18).

The lengthy waiting period in seeking out-patient services along with poor clinical interactions between the REW and clinicians resulted in a delayed and inappropriate access by REW to healthcare locally.

Many staff described REW’s self-regulated life
within a family who didn’t engage much in conversation with doctors and nurses. However, the lack of communication was related by the women to the verbal abuse and bad behaviors of the staff.

Family members of these women [REW] visit us and ask for medication for these women. And in hospital visit, these women take their elder son or any of adult family members who speaks to the doctors and nurses in order to organize treatment (Staff 1)

They have short tempers. We must keep patience when they become angry … If you give some money, they will behave very well with you. They will be cool if they get money. Can you understand this? It is all about money. When they see money in patient’s hand, they become greedy. They do not want to miss any chance of taking money from patients (REW 12).

The staff and REW blamed each other for such poor interactions in clinical settings that also combines with poverty in the relegation of the women’s meaningful utilization of healthcare.

Ability to pay

The financial inability of the women in seeking treatment was identified in the views of the staff and REW because of a lack of personal income/savings and financial support from family members and the government.

The staff indicated poor living conditions among the REW because of a lack of engagement in the formal employment sector. Similarly, most of the REW described their involved in unpaid household tasks or low-paid jobs that resulted in little or no personal income with no savings (average BDT 768/monthly).

You can see several elderly women used to begging in this area. They walk all day and can manage 40-50 BDT (Bangladeshi Taka) for their daily expenses. It’s hard for them to pay for diagnosis and medications (Staff 3). I used to collect vegetables near to my house, but I cannot afford the cost of oil. I cannot afford even the cost of ginger and salt. I am living on an old age allowance so that it is hard for me to afford food for myself and my granddaughters. I boil vegetables rather than fry with oil (REW 8).

The women’s financial ability, as described by the staff and REW, was largely dependent on the economic status of family members, but the household economy was generally identified as poor:

Most elderly women are in lower middle-class families, so that family members cannot afford, though they like to help these women. How can a person manage his wife and children with a low income? It is then a burden for them to help their father and mother. They can give if they have but they should help themselves (Staff 8). My husband used to spend all his money on our family’s monthly expenditures. We cannot save a single penny … I have three sons, but they do not give us any financial support (REW 1).

This poor economic capability of a REW and her household contributed to the decision about where and how much healthcare utilization was possible for her.

The poor financial capability of the women was also related by many staff and REW to the support of the government. Both staff and REW mentioned the monthly elderly allowance allocated by the government, but the number of REW receiving the allowance was low.

We have the official old age allowance program. There are many poor elderly people in our country. If there are 100 people, then only five people will get it. The other 95 are not receiving this elderly allowance. It is much less than the need (Staff 1). I have been receiving old age allowance for the last three years. … I previously received 900 BDT in every three months, but now this allowance becomes 1,200 BDT per three months. This is the only source of income for me which help me to live. … Is it possible for me to manage my family with this amount? (REW 8).

Poor financial security because of a lack of income and financial support limited the women’s use of healthcare, and this lack of access was also a result of the women’s health beliefs and behaviors.

Reluctance to seek treatment

The final theme represented the staff’s and REW’s views about the healthcare beliefs and behaviors of the women that built a reluctance among the women towards using medical treatment.

A lack of health literacy among the women, according to the staff and REW, led to little or no knowledge about symptoms and diseases and understanding of the importance of using clinical treatments.
My father did not send me to school. We four sisters were alive out of eight. My parents did not teach us Bengali. They thought that if I studied in Bengali, I might engage in relationships with boys. I can only read the Quran, but I cannot read or write Bengali (REW 22).

Another problem is the women’s lack of education. Most of them cannot read or write. Lack of education contributes to their lack of awareness. They don’t understand that they are suffering from a big disease. They do not consider even they have cough or fever ... they consider visiting traditional healers rather than us (Staff 11).

The low rate of health literacy among the women was identified as a determinant having an impact on the REW’s use of local clinical treatments in a timely manner as well as the women’s health beliefs.

While most staff stated religious beliefs leading to the REW believing in superstitions resulted in not using clinical treatment options, the majority of REW indicated a tendency to rely on religion and self-medication.

Wearing holy black thread is prevalent in this village. There are a few uneducated Molla or Imam, people used to go to them for tabij [Holly black necklace] or pari pora or fu [Holly water or breath] for their treatments. Though these people cheat them, they like to believe them as they are religious people…. In Sylhet, most people believe in majar or peer etc (Staff 7).

I do not like to see doctors. Allah is everywhere and Allah will look after me. ... If I suffer from any disease, I know that I will overcome the health condition after a certain period (REW 15).

I collect medications from local pharmacy while I suffer from headache. ... They do not ask me to do any pathology test and they give medications without prescription (REW 21).

This meant that the reason for not visiting local clinics, as indicated by the staff and REW, was the influence of religion on the women’s health beliefs and behaviors in seeking treatments. Thus, several determinants, including a lack of resources, poor skills of staff in treatment and behavior, long waiting times, poverty, health illiteracy and poor health beliefs, alone or in combination, impacted the REW’s use of healthcare locally.

Discussion

This study identified the prevalence of symptoms and diseases in different seasons among the REW and explored the determinants associated with the women’s access to primary healthcare. In the three major seasons (summer, rainy and winter), the five symptoms of cold fever, diarrhea, nausea, headache and digestive problems were identified as prevalent, which validates the findings in other tropical countries [17, 19]. This study also demonstrated the highest number of cases of symptoms or diseases was recorded in the age groups of 60–70 years and 71–80 years, which is not an unusual finding in low- and middle-income countries where the life expectancy of women is 70 years [23–25]. There were significant differences found in the prevalence of three seasonal symptoms (nausea, headache and digestive) among the study villages, and this means that treatment is beyond reach for most REW and the primary healthcare centers were not prepared to take preventive measures and provide comprehensive care in the region [3]. As a result, it was found that 78.5% and 55.4% reported one and two symptoms/diseases, respectively, which is similar to the findings of other studies, which strongly indicated that seasons influenced the diseases and comorbid conditions of the women [17, 19]. This prevalence of seasonal diseases among the REW indicated a requirement for regular and complete medical care, but the use of primary healthcare by the women was lower than in any other population groups in Bangladesh [5]. For example, it was found that the community clinic visits varied significantly among the seasons, where the highest number of visits was recorded in summer.

This study clearly showed a relationship between the healthcare system and personal level determinants and the REW’s utilization of primary healthcare. The system determinants identified in this study were a lack of resources, inadequate gerontology knowledge of staff, waiting period in clinics, and poor patient-staff relationships. A shortage of clinicians is found in regional clinics in Bangladesh, and even in developed countries [25–27], but the high absence of doctors and the mismanagement of medications in the clinics were recorded exclusively in this study and in studies conducted in other South Asian countries [28, 29]. The
focus of the National Health Policy of Bangladesh on maternal and child health care contributed to the development of a healthcare infrastructure and practices surrounding pregnant women and children [5]. For example, the door-to-door visits program operated by family welfare assistants does not provide preventive care to the elderly women for seasonal diseases [2]. While the elderly women living in developed countries, especially in urban areas, enjoy geriatric care services including digital healthcare, there are limited health services in regional areas around the world [26, 27]. Long waiting periods for treatment in clinics was reported by both participant groups. Due to the burden of overpopulation and the lack of doctors in the outpatient service period, REW avoid local healthcare, which corroborates the findings studies conducted in low-income countries [23, 29]. Geriatric education and training were unavailable for rural health staff, as identified in other studies [28, 29], which influenced the staff’s ability to understand comorbid conditions and to promote preventive measures and clinical treatment in different seasons for REW. It is possible that the lack of knowledge of gerontology and seasonal symptoms among the staff impacted on their relationships with REW.

In this study, poverty and a lack of financial support were found for REW living in Sylhet district. According to Chowdhury et al (2016), there was a difference of rural women’s average monthly income between an employed group (BDT 4,166) and unemployed group (BDT 250) [30]. Similarly, it was found in this study that 74% of REW had no income, while the average monthly income of the employed women was BDT 768. Despite efforts made by their family members and the government to generate income of poor REW in Bangladesh, poverty is still found to be most prevalent at old age [11, 31]. Previous studies indicated a prevalence of at least two chronic diseases among most REW [9, 32], and poverty has been attributed to the women’s non-use of healthcare in a timely and regular manner [3]. When poverty was recorded in all age groups of REW in this study, which contributed to an inability to pay for the cost of transportation for travelling to clinics, diagnosis and medications for their chronic diseases, it was hard for them to use preventive vaccinations for the health effects of seasonal variations differently. Thus, poverty was a major determinant for seasonal infections that placed the women at risk of severe comorbid conditions and not accessing healthcare available locally, which was also a result of the women’s health illiteracy and beliefs.

The findings of the present study indicate that health illiteracy along with religion influence the pattern of utilization of healthcare of REW relating to seasonal diseases and comorbid conditions. A lack of health literacy was found in the REW who participated in this study and in other studies which found that religiosity had an influence on general and health education of women throughout their life, as well as encouraged them to believe in traditional healing and self-medication, especially in Muslim majority countries [33, 34]. The present pattern of seasonal diseases in Sylhet district suggests that additional effort is needed to intensify the healthcare education for REW through the current door-to-door visiting program. Because of the prevalence and outcomes of seasonal diseases in public health, educational efforts should be made in relation to religious and cultural beliefs to improve awareness about preventive measures and treatment options as a control strategy.

In conclusion, the prevalence of seasonal symptoms/diseases and the determinants of REW’s use of primary healthcare were generated from the data provided by healthcare professionals and REW in Sylhet district. Despite the methodological limitations of the small sample size and recall bias, this study provides an insight into the prevalence of physical pain, digestive problems, headache, cold fever and nausea among the women and how their utilization of healthcare at local level is restricted because of the system determinants and the poor living conditions. These findings should provide policy makers and rural primary healthcare staff with information on the health effects of seasonal changes and the importance of developing care plans and protocols to accommodate REW’s seasonal care needs. As they are not aware that the summer, rainy and winter seasons are the periods of high rate of infections, the REW cohort can be briefed to observe and report any signs or symptoms to local clinics. Because of the small number of participants and the qualitative nature of this study, further studies are required to explore whether the prevalence of
search symptoms and diseases and access are distinctive to Sylhet District or are common to the REW living in other regions of Bangladesh.

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Conflict of Interest

The author declared no conflicts of interest.

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バングラデシュのシレット地区農村部の高齢者女性を対象とする季節的症候と疾病の自己評価及びプライマリケアの利用

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要   旨：バングラデシュを含む亜熱帯の国々では、季節の変動が高齢者の身体的健康および疾病の状態にマイナスの影響を与えている。これまでの研究では、特に農村部の高齢者女性をサポートするプライマリケア体制および医療活動において、季節の変動がもたらしたリスクを取り上げたものはない。季節の変動が農村部の高齢者女性の病気や症状を増加させることもあるなかで、本研究は季節の変動が健康に与えた影響を特定し、その地域の女性が医療サービスの利用に関連する決定要因を調べることを目的としている。我々は、農村部の高齢者女性65名および医療従事者11名を対象として録音の半構造的面接といった簡単な調査を行い、混合研究法を使用した。定量的データはSPSSで分析し、定性的データの主題分析はNVivoによって行った。農村部の高齢者女性の自己評価した健康歴から、以下三つの主要な季節的症候の有病率を特定した。頭痛（28/43.1%）、消化器疾患（27/41.5%）、および体の痛み（27/41.5%）。吐き気、頭痛、消化器障害など三つの症状の有病率は、調査した村によって大きく異なった（p<0.05）。女性のうち、60–70歳の年齢層の症例数が最も多く、次に71–80歳の年齢層が続いた。症例数は三つの季節で大きく異なった（p = 0.021）。一方、女性のうち78.5%と55.4%がそれぞれ一つと二つの症状/疾患を報告したが、地域の外来受診は季節によって大きく異なった（p = 0.011）。プライマリケアの利用が低く、医療制度、女性の貧しい生活環境および治療への抵抗感が医療サービスの利用を制限している。我々の研究は予防策と治療の促進において政策の改正が必要であると示唆した。決着策として、地域の診療所機能を強化し、医療スタッフと高齢者女性に対する健康教育を継続させることが挙げられる。

キーワード：季節変動、健康への影響、プライマリケア、決定要因、農村部の高齢者女性。

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