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Research Article

Post-bath Itching in Ekpoma and Environs: A Disturbing Prevalence Rate

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ABSTRACT

This study assessed the prevalence of and problems of post – bath itching in Ekpoma and it’s environs. It involved the use of questionnaire in obtaining data on the demography, occurrence, duration, perceived cause(s) and intervention strategies in post bath itching. Of the 450 estimated sample size, 400 subjects completely responded to the questions giving a response rate of 88.89%. Overall, 243 of the studied population do experience post bath itching giving a prevalence of 60.75%. The chi-square analysis indicates that males are 3.907 times more likely to experience post-bath itching than females. The duration of itching and the perceived causal factors vary widely among the participant and so are the intervention strategies.

Keywords: *Itching, Post-bath, Ekpoma.*

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INTRODUCTION

One depressing and distressing condition most people tend to ignore because of its relatively short duration is post-bath itching. This condition can however exert psychological effect, to the extent of abandoning bathing or developing phobia to bathing (Salami *et al.*, 2009). Itching is an unpleasant sensation which provokes the desire to scratch (Woold, 1989) and it is among cutaneous sensations that have a place of unique importance in Dermatology. When itching occurs during or after contact with water such as in bathing, it is called post-bath itching or bathing pruritus which is a form of aquagenic pruritus. According to Sekar *et al.* (2011), aquagenic pruritus is a skin disease characterized by severe itching without observable skin lesions felt after contact with water. This is an extremely common cause of generalized itching/pruritus that is characterized by the development of severe, prickling-like, tingling or burning skin lesion and is evoked by contact with water (Bircher, 1990).

The prevalence of itch varies significantly across different ethnic populations and several pruritic conditions occur more frequently in certain ethnic group and in certain diseases (Tey and Yosipovitch, 2010). However, the impact of ethnicity on itch has so far received minimal attention. The study of

chronic itch is complicated, as it is influenced by multiple factors, such as age, environment, social, cultural, level of education and psychological factors. Knowledge of racial differences in pruritic conditions is useful to aid diagnosis and to provide appropriate management. Few studies have examined the differences between skin types in relation to ethnicity and neurobiology of the skin (Tey and Yosipovitch, 2010). Studies indicate that Asian skin is more sensitive to exogenous chemicals, and this may be due to a thinner stratum corneum and a higher density of eccrine gland (Rawlings, 2006). Japanese cheek skin was found to have greater number of acid-sensing ion channels (ASICs) and heightened sensory threshold in comparison with Caucasians. This may explain why Japanese women more frequently report itch and burning sensations after application of cosmetic products (Maddison *et al.*, 2009).

Available studies by Salami *et al.* (2009) has reported a 23.8% prevalence among undergraduate students in Ambrose Alli University, Ekpoma, Edo State and Olumide and Oresanya (1987) reported 21% prevalence among dermatologic patients seen at Lagos State University Teaching Hospital. Studies in the general population are lacking as the available are those presenting to the hospital to seek treatment

or educated population who are likely to seek health care. The aim of this study is to examine the prevalence of, and immediate reaction to post bath itching in a general population of Ekpoma, Esan West Local Government Area, Edo State, Nigeria.

MATERIALS AND METHODS

Study Area: This is a descriptive cross-sectional study conducted in Esan West Local Government Area, Edo State, Nigeria. The Local Government Area has its Administrative Headquarters in Ekpoma, located approximately on longitude 8°5' East of the Greenwich meridian and latitude 7°23' North of the equator. Ekpoma occupies an area of 502km² and has a population of 125,842 (National Population Commission, 2006). Ekpoma is host to several public and private institutions including the state-owned University, Ambrose Alli University. It is also home to multi-ethnic nationalities predominantly the Esan, Binis, Igbo, Hausas, Yoruba and people from other neighbouring communities. The inhabitants are mostly farmers, traders, public servants and students.

Sample Size and Sampling Procedures: Sample size (n) was determined using the formula by Araoye (2004) and taking the prevalence of post-bath itching to be 50.0% considering the limited study in the area. This gave an approximated sample size of 450. The study employed the multi-stage sampling technique involving four stages.

Ethical Consideration: Ethical approval was obtained from the Health Ethics Review Committee of the Local Government Area. The respondents' consent was obtained after provision of adequate, clear and complete information about what the study entails. The study was conducted in compliance with the Declaration of the Right of the subject/participant (WMA, 2000). Confidentiality of data was ensured by not including name of the participants or any information linking them.

Inclusion and Exclusion Criteria: All apparently healthy adults in the study area that gave inform consent were included. Subjects below 18 years or apparently symptomatic subjects for any ailment were not included.

Data Collection Instrument: Questionnaire developed from existing literatures was used for data collection. The questionnaire consisted of five sections which was used in obtaining information regarding socio-demographic characteristics, prevalence of post-bath itching and duration of itching, perceived circumstances that cause post bath itching and intervention strategies employed during post bath itching.

Data Analysis: Data analysis was done using the Statistical package for social sciences (SPSS) version 20. The data were subjected to descriptive (frequency, percentage and mean) and inferential statistics (odd ratio, Chi-Square). Where applicable, statistical difference was determined at a confidence interval of 95% and p<0.05 was considered significant. Results are presented in tables and charts.

RESULTS

Table 1 presents the demographic profile of the studied population. Out of the 450 estimated sample size, a total of 400 subjects completely responded to the question and were duly valid and this gave a response rate of 88.89%. The mean age of the sampled population was 25.61±5.622 year and range from a minimum age of 18 years and 48 years. Overall, 63.30% were within the ages of 18-25 years, while 29.0% and 7.50% were within the ages of 26-35 years and 36-48 years respectively. The sampled population was made up of 52.0% (n=208) male and 48.0% (n=192) female. Also 3.50% (n=14) had no formal education while the other had a form of education distributed in tertiary (n=312; 78.0%), secondary (n=60; 15.0%) and primary (n=14; 3.50%) education. While 76.30 (n = 305) were single, 20.80% (n=83) were married and the other 1.80% (n=7) and 1.30% (n = 5) were divorced and widow/widower respectively.

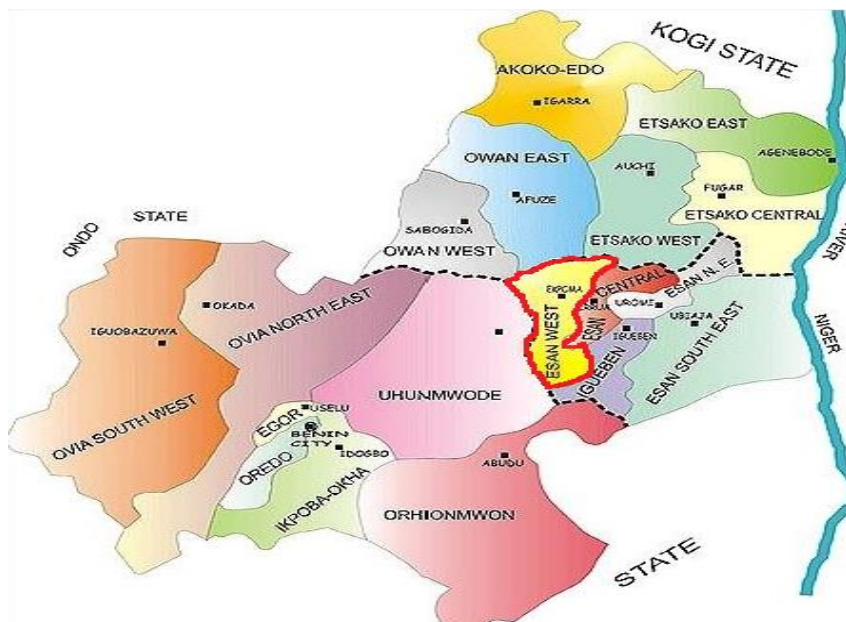


Figure 1.
A map of the study location (Note: Study area is indicated in red)

Table 1:
Demographic profile of the studied population

| Demographic profile | Variables | Frequency | Percent |
|---------------------|---------------------|-----------|---------|
| Age (years) | 18 – 25 | 253 | 63.3 |
| | 26 – 35 | 117 | 29.3 |
| | 36 – 48 | 30 | 7.5 |
| Gender | Male | 208 | 52.0 |
| | Female | 192 | 48.0 |
| Educational status | No formal education | 14 | 3.5 |
| | Primary education | 14 | 3.5 |
| | Secondary education | 60 | 15.0 |
| | Tertiary education | 312 | 78.0 |
| Marital status | Divorced | 7 | 1.8 |
| | Married | 83 | 20.8 |
| | Single | 305 | 76.3 |
| | Widow/widower | 5 | 1.3 |

Figure 2 indicates the prevalence of post-bath itching in the studied population. Two hundred and forty-three (243; 60.75%) of the studied population have experienced post-bathing itching while 157 (39.25%) had never experienced it. Of the victims of post-bath itching, 59 (24.28%) reported experienced it anytime they bath while 74 (30.45%), 59 (24.28%) and 51 (20.99%) reported they only experienced post-bath itching in the morning, afternoon or evening respectively.

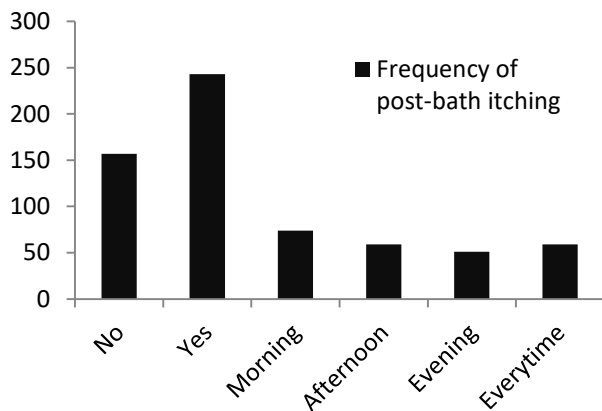


Figure 2:
The prevalence of post-bath itching in the studied population

Table 2 is a table showing the relationship between gender and post-bath itching. Of the 243 who experienced post-bath itching, 136 (55.97%) were males while 107 (44.03%) were females. This gives a 1.3:1 male/female ratio.

Table 2:
Gender distribution and chi-square analysis of the relationship between gender and post-bath itching

| Gender | Post-bath itching | | Total | Pearson Chi-Square |
|--------------|-------------------|------------|------------|--------------------|
| | No | Yes | | |
| Male | 72 | 136 | 208 | $r = 3.907$ |
| Female | 85 | 107 | 192 | $p = 0.045$ |
| Total | 157 | 243 | 400 | $p < 0.05$ |

Figure 3 shows the duration of post-bath itching in the studied population. Thirty-four (34; 13.99%) of the victims experienced the itching for few seconds, 102 (41.98%) for 2 to 5 minutes, 31 (12.76%) for 6 to 20 minutes and 24 (9.88%) for over 20 minutes. However, 52 (21.40%) could not specify the duration of itching.

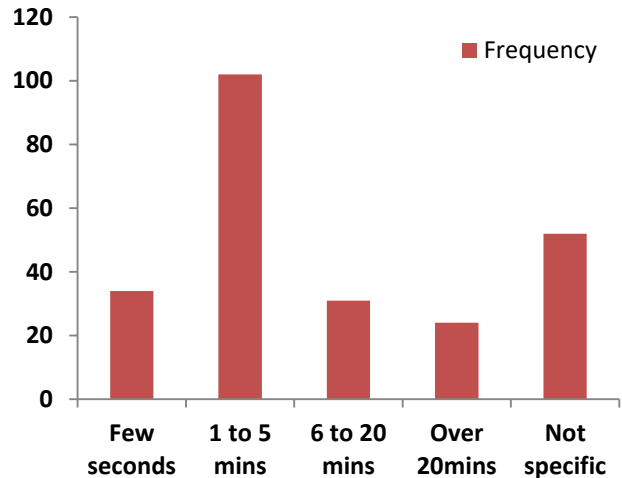


Figure 3:
The duration of post-bath itching in the studied population

Table 3:
The perceived likely causes of post-bath itching among symptomatic subjects

| Variables | Frequency | Percent |
|-------------------|------------|--------------|
| Rain | 69 | 28.40 |
| Dirty water | 56 | 23.05 |
| Dirty towel | 31 | 12.76 |
| Dirty surrounding | 35 | 14.40 |
| Change of soap | 18 | 7.41 |
| Old sponge | 5 | 2.06 |
| Heat | 3 | 1.23 |
| Dry skin | 3 | 1.23 |
| I don't know | 23 | 9.47 |
| Total | 243 | 100.0 |

Table 4:
The intervention strategies employed among those experiencing post-bath itching

| Variables | Frequency | Percent |
|-----------------------------------|------------|--------------|
| I do nothing | 13 | 5.35 |
| Used boiled/warm water | 67 | 27.57 |
| Rub cream and powder | 52 | 21.40 |
| Scratch | 40 | 16.46 |
| Clean body quickly | 9 | 3.70 |
| Quickly dress and leave the house | 9 | 3.70 |
| Use antiseptics in water | 38 | 15.64 |
| Use drugs | 7 | 2.88 |
| Change sponge | 8 | 3.29 |
| Total | 243 | 100.0 |

Table 4 presents the intervention strategies employed among those experiencing post-bath itching. Majority (n=67; 27.57%) reported that they bath with warm as a means of controlling their itching. On the other hand, 21.40% (n = 52)

rub cream/powder while 16.46% (n=40) and 15.64% (n=38) scratching and use of antiseptics respectively. Some 2.88% (n=7) and 3.29% (n=8), reported they use drugs and change sponge, while 3.70% (n=9) quickly clean and dress up to leave the house.

DISCUSSION

A rather disturbing prevalence rate of post-bath itching (60.75%) was observed in this study with the morning incidence more common. The alarming assertion is made in view of noted results from other studies. The prevalence in the present study is alarming compared to the 23.8% reported among undergraduate students Ambrose Alli University Ekpoma, Edo State, Nigeria (Salami *et al.*, 2009) and the 21% reported amongst patients attending the Lagos University Teaching Hospital skin care clinic (Olumide and Oresanya, 1987). Same is also significantly higher compared to the prevalence of 4.5% found in hospital employees in Israel (Potasman *et al.*, 1990) or in a cross-sectional study in French population which reported 20% to 30% of pruritic cutaneous conditions in relation to skin disease (Wolkenstein *et al.*, 2003). A pilot study of 200 Germans has documented the life prevalence of itch to be 22.6% in the general population (Matterneet *et al.*, 2009). In a cross-sectional study of 18,770 adults in Norway, itch over the past week was higher among East Asia (18%) and Middle East/ North Africa (13%) compared with Norwegians (7%) (Dalgard *et al.*, 2007). This difference between our study and those conducted elsewhere may be due to difference in background and demography. This assertion is based on the fact by Salami *et al.* (2009) that most of the facts/figures of aquagenic pruritus are environment-based. Thus, psychosocial factors may be confounding factors and the difference prevalence between studies may be due to difference in health behaviors that may have cause the over or under reporting by the respondents.

Also a finding of this study, males are more likely to experienced post-bath itching than females in a ratio of 1.3 to 1 with likelihood 3.907 times. Salami *et al.* (2009) reported similar but higher male to female ratio of 1.7:1. This male to female ratio although seem low, suggests the possible implication of sex hormones. However, aquagenic pruritus commonly occur in patients with polycythemia vera (Heitkemper *et al.*, 2010) and certain individuals seem to have genetic origin (Hirshfeld, 2010) and has been linked to a number of disease and certain medications (Ekpe and Utomi, 2017).

On the duration of post-bath itching, majority (41.98%) reported lasting periods of 1 to 5 minutes, tallying with Salami *et al* (2009) report of the mean duration of 5.5 ± 2.7 minutes. However, 13.76% and 9.88% of those experiencing post-bath itching reported it lasts for 6 to 20 minutes and over 20 minutes respectively in our study. An average of 40.6 minutes has been reported amongst patients with aquagenic pruritus in a study by Steinman and Greaves (1985). In another study by Potasman *et al* (1990) it was found that the onset of itching occurred within 5 minutes of exposure in 76% of the cases and usually lasted between 10 and 30 minutes.

Water which is physically, chemically, and microbiologically wholesome is important for human use and health benefits.

Much of the water used for bathing in Ekpoma and environs is that trapped in artificial wells constructed with concrete, decked or roofed with corrugated roofing sheets or in some cases left open, a practice that has not improved till date. This well water is heavily contaminated with various microbes (Edeogaet *et al.*, 1998). It thus becomes difficult to exculpate general water unwholesomeness as an etiologic factor of post bath itching in the study area.

In this study, rain water was said to be the major cause of post-bath itching. This is in line with the study by Salami *et al.* (2009) who reported the commonest source of water to which respondents itch was to rain water (23%) followed by cold water (19%) and well water (17%). Also, it was observed that majority try to stop their itching by using boiled water or warm water (see table 4). This correlates with the finding by Salami *et al.* (2009) who reported cold water may also cause post-bath itching. This is in contrast to what was observed by Potasman *et al* (1990) in their subjects in which there was no association of water temperature with occurrence of pruritus. The used of warm or boiled water as intervention strategies in this study is not totally unexpected considering the fact by Salami *et al.* (2009) that cold is a widely recognized cause of degranulation of mast cells whether in the skin or lungs or elsewhere which may be a strong factor in this condition. Moreover, it is worthy of note that heating the skin to 41°C blocks itch but increases pain perception (Salami *et al.*, 2009). Also in line with the findings of this work, the study by Salami *et al.* (2009) has reported affected subjects in their experiments try to generate body heat by immediately wearing clothes after bathing, or by moving around or immediate application of occluding creams. Tight fitting clotting has also been documented as method of aquagenic pruritus management (Spelman and Dicker, 2001). These tend to support warmth or temperature stabilizing mast cells and alleviating the itching after bathing (Goodkin and Bernhard, 2002; Spelman and Dicker, 2001).

The prevalence rate of post-bathing itching in Ekpoma and Environs is alarming. This high prevalence is disturbing because it may interrupt the normal activities of affected subjects and suppress the urge to bath and in-turn affect the quality of life. The perceived etiology is multifactorial and the intervention strategies are diverse.

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