Title: Patients who feel more accountable have better adherence: a clinical study in patients with xerosis in the context of previous or current atopic dermatitis

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Introduction: Non-adherence worsens healthcare outcomes and attributes to over $100 billion dollars of avoidable healthcare costs annually in the US. Factors that affect adherence rates include treatment complexity, cost of medications, and aversion to side effects. Atopic dermatitis (AD) is a chronic disease that often involves the use of topical medications, making adherence to treatment regimens especially poor. Accountability, a psychosocial construct, which is defined as the expectation of an individual “to account for his or her actions or inactions,” may influence patients’ motivation to adhere to their medication regimens.

Objective: To characterize the relationship between perceptions of accountability and adherence rates in patients with xerosis in the context of previous or current AD

Methods: A total of 35 adult subjects with a diagnosis of xerosis in the context of current or previous AD were recruited from the Department of Dermatology clinics at Atrium Health Wake Forest Baptist Medical Center. Six patients were excluded due to loss to follow-up. Patients were given a moisturizer designed for AD and instructed to apply it once daily for three months. No other topical treatment was permitted except for daily sunscreen. Adherence was assessed using the Medication Event Monitoring System (MEMS) Cap. Subjects were blinded to the method of adherence measurement until study termination. Accountability was assessed at patients’ initial visit and their follow-up visit using the previously validated Accountability Measurement Tool (AMT). Data were analyzed using the SAS Software 9.4. Correlation between AMT levels and adherence rates was assessed using a univariate linear regression model. Differences in group comparisons by mean score were analyzed with a student t-test.

Results: The mean age of patients was 64 years old. Fifty-seven percent of patients were female and 42% were male. Higher accountability was associated with greater adherence (Figure 1). Patients with “high” AMT scores (47-59) were 41% more adherent than patients with “low” AMT scores (31-46) as assessed at follow-up (53% vs. 38% respectively, P=0.07). There was a positive correlation between AMT scores and adherence rates in patients at their 3-month follow-up (r(27)=0.42; p=0.03), with the strongest correlation in responses to the statement “I am concerned of how I would be perceived if my doctor thought I didn’t do a good job taking my medication” (r(27)=0.49, P=0.01) followed by responses to the statements “An upcoming office
visit with my doctor motivates me to follow my doctor’s recommendations” (r(27)=0.45, P=0.02) and “I am afraid of disappointing my doctor by not following his/her recommendations” (r(27)=0.42, P=0.02).

Discussion:
AD is a chronic disease that negatively impacts patients’ overall quality of life. Treatment regimens can be complex and often involve topical therapies. Consequently, poor adherence often interferes with disease improvement in patients with AD. Accountability is a social influence that may serve as a motivating factor for human behavior. Patients who feel more accountable for their actions are more likely to be adherent. In our cohort, patients with higher perceptions of accountability towards their provider had better adherence that seemed most closely associated with their concerns of their doctor’s perceptions of them and their fear of disappointing their doctors. Methods to increase patients’ perceived accountability through enhanced patient-physician relationships, frequent in person follow-up contact with their providers, or less costly electronic interactions may promote better adherence in patients with AD.

Figure 1: Adherence rates as a function of AMT scores in patients’ with xerosis at 3-month follow-up