Targeting Water Conservation Extension Programming to Residents Governed by Homeowner's Associations

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Introduction

Research has shown residents living in homeowners associations (HOAs) use more water than those who are not restricted by HOA governance (Monaghan, Ott, Wilber, Gouldthorpe, & Racevskis, 2013). Marella (2014) found water use for recreational-landscape increased from 2005 to 2010 in Florida. Baum, Dukes and Miller (2005) found that turfgrass is typically over-irrigated, estimating 71% of total water consumption for landscape irrigation is used on turfgrass. Since consumer consumption of water in Florida is greater than that used for any other purpose, and most of this water is being used on the home landscape, getting residents to reduce water use in the home landscape is imperative to ensuring a future water supply. According to Huang, Lamm, and Dukes (2016) homeowners using an excessive amount of water have specific demographic characteristics and behavioral patterns and many live in HOAs. Thereby extension programs can be formulated targeting water conservation to HOA residents. The purpose of this study was to examine Florida residents living in HOAs and their perceptions of turfgrass to inform extension programming focused on driving HOA policy that will reduce water use aligning with Priority Area 1 and Priority Area 7 of the National Research Agenda (Roberts, Harder, & Brashears, 2016). The objectives of the study were to 1) describe residents living in HOAs and 2) identify HOA residents' perceptions of turfgrass.

Theoretical Framework

Ensuring psychological knowledge accessibility to program planners helps in effective program design (McKenzie-Mohr, 2000). Community based social marketing as a theoretical lens asserts behavioral change can be achieved by removing structural barriers based on established norms, which requires direct contact among community members. Therefore the benefits of community based social marketing within HOAs is feasible (McKenzie-Mohr & Smith, 1999). Norms outline the set of external behaviors which must be attended to by a group (Hackman,1992), and they in turn result in perception shifts resulting in behavioral change.

Methods

This study was descriptive using an online survey. The instrument was researcher-developed and reviewed by a panel of experts. After the instrument was pilot-tested to ensure its validity and reliability, the survey was administered electronically. Data were collected from Florida residents aged 18 or older using a non-probability opt-in sampling technique. The survey was sent to 982 residents with 524 received complete responses after passing manipulation checks resulting in a 53% participation rate. To ensure the representativeness of the respondents to the population, post-stratification weighting methods were used (Kalton & Flores-Cervantes, 2003). Data were analyzed using SPSS® 24.0.

Respondents were asked if they lived in neighborhoods with a HOA to be identified as HOA residents and used in further analysis. Nearly 31% (n = 164) of the respondents were identified as living in a HOA. Respondents' perceptions regarding turfgrass were measured using 10 statements on a five-point Likert-type scale. Lastly, respondents were asked a set of demographic questions, including sex, age, income level, and home ownership status.

Results

More than half of the respondents residing in a HOA were male (57%) and between 20 and 49 years of age (60%). Almost 58% owned their home. Approximately 37% reported being Democrats and 25% Republican with the rest indicating Other. Annual household income was distributed fairly evenly between $29,999 and $149,999.

Table 1
Residents Governed by HOAs Perceptions of Turfgrass (*n* = 164)

	Strongly Disagree/Disagree %	Neither Agree or Disagree %	Strongly Agree/Agree %
Turfgrass lawns have an overall negative impact on the water quality of nearby water bodies.	17.1	58.5	24.4
I think too many people have turfgrass lawns.	23.2	50.6	26.2
Overall, I believe turfgrass lawns have a positive effect on the environment.	17.1	53.0	29.8
I appreciate when the homes in a neighborhood have well-maintained turfgrass lawns	6.1	23.2	70.7
Having a healthy turfgrass lawn is important for maintaining a proper.	8.5	24.4	64.6
I prefer native plants over turfgrass	15.9	40.2	43.9
A turfgrass lawn is the best landscape option for providing a safe space	15.9	54.3	29.9
I feel turfgrass lawns are unnatural	32.3	40.2	27.4
Most people put too many resources into managing their turfgrass lawns	20.1	44.5	35.4
Turfgrass lawns require too much water to maintain	15.9	51.2	32.9

Discussion and Recommendations

The majority of those residing in HOAs appreciate homes with maintained lawns. This displays perceived importance of lawns and partly explains why so many acres in Florida are turfgrass (Milesi et al., 2005). But awareness on this is limited, with a majority of the respondents being undecided about too many people having turfgrass lawns and over 30% reporting they believed turfgrass lawns are unnatural. While respondents were undecided on many of the statements related to turfgrass and its impacts on the environment they did strongly agree or agree with those statements related to aesthetics, which is what HOAs typically focus on and regulate as confirmed by Dunbar and Dudley (2007). This signals that extension programming can use a community based social marketing approach targeting behavior change (Monaghan et al., 2013) but should not necessarily focus on the environmental impacts of water management. Rather, those living in HOAs need to learn that there are other aesthetically pleasing landscapes that do not require as much water as turfgrass and how to water their existing turfgrass properly. By using social norms to target specific respondents living in HOAs, a greater change could be realized. As residents in HOAs are primarily concerned with aesthetics, future research should focus on the causes and types of motivation that could lead to knowledge gain and ultimately behavior change related to lawn management.

References

Baum, M. C., Dukes, M. D., & Miller, G. L. (2005). Analysis of residential irrigation distribution uniformity. *Journal of Irrigation and Drainage Engineering*, *131*(4), 336-341. doi: 10.1061/(ASCE)0733-9437(2005)131:4(336)

Dunbar, P. M., & Dudley, C. F. (2007). *The law of Florida homeowners associations: Single family subdivisions, townhouse & cluster developments, master community associations* (7th ed.). Sarasota, FL: Pineapple Press.

Hackman, J. R. (1992). Group influences on individuals in organizations. In Dunnette, Marvin D., Hough, Leaetta M. (Eds.), *Handbook of industrial and organizational psychology* (pp. 199-267). Palo Alto, CA, US: Consulting Psychologists Press.

Huang, P., Lamm, A. J., & Dukes, M. (2016). Informing extension program development through audience segmentation: Targeting high water users. *Journal of Agricultural Education*, 57(2), 60–74. doi: 10.5032/jae.2016.02060

Kalton, G., & Flores-Cervantes, I. (2003). Weighting methods. *Journal of Official Statistics, 19*(2), 81-97. Retrieved from http://search.proquest.com/docview/1266791413/fulltextPDF/3B620E1C97DE4426PQ/1?accountid=10920

Marella, R. L. (2014). *Water withdrawals, use, and trends in Florida, 2010* (No. 2014-5088). Retrieved from U.S. Geological Survey website: http://dx.doi.org/10.3133/sir20145088

McKenzie-Mohr, D. (2000). New ways to promote proenvironmental behavior: Promoting sustainable behavior: An introduction to community-based social marketing. *Journal of Social Issues*, *56*(3), 543-554. doi:10.1111/0022-4537.00183

McKenzie-Mohr, D., & Smith, W. (1999). *Fostering sustainable behavior: An introduction to community-based social marketing*. Gabriola Island, BC, Canada: New Society Publishers.

Milesi, C., Running, S. W., Elvidge, C. D., Dietz, J. B., Tuttle, B. T., & Nemani, R. R. (2005). Mapping and modeling the biogeochemical cycling of turf grasses in the United States. *Environmental Management*, *36*(3), 426-438. doi:10.1007/s00267-004-0316-2

Monaghan, P., Ott, E., Wilber, W., Gouldthorpe, J., & Racevskis, L. (2013). Defining audience segments for extension programming using reported water conservation practices. *Journal of Extension*, *51*(6). Retrieved from https://www.joe.org/joe/2013december/a8.php

Roberts, T. G., Harder, A., & Brashears, M. T. (Eds). (2016). *American association for agricultural education national research agenda: 2016-2020.* Gainesville, FL: Department of Agricultural Education and Communication.