Skateboarding Policies on College Campuses in the United States: A Look Toward Promoting Use of Active Transportation

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Objective: We investigated university active transportation policies in the United States for commuter-skateboarding. **Methods:** Universities were selected from 12 categories (very small to large; non-residential to highly residential) via Carnegie Classification of Institutes of Higher Education (N = 360). **Results:** Skateboarding policies were present at 43.3% of universities. Among those, roughly one-fifth prohibited all skateboarding on campus. The remaining majority specified conditions under which skateboarding could be used (eg, places, times). Larger, more residential universities were more likely to have skateboarding policies. Reasons restricting skateboarding included potential property damage or injury to the skateboarder, with a notable view of skateboarding being "disruptive to the community." Environment and culture appear to influence these policies. **Conclusion:** Campus policymakers should consider the broader impact of commuting mode restrictions.

Key words: skateboard; active transportation; commuter-skateboarding; campus safety
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In the United States (US), some college and university campuses have chosen to restrict the use of specific forms of active transportation (AT) (ie, human-powered, non-motorized form of transportation) for various reasons. Skateboarding, in particular, has been seen as a deviant behavior that is perceived to be linked to violence, crime, and property destruction. At the same time, it can be an efficient mode of transportation that also promotes physical activity and well-being.[1] This dual paradigm complicates skateboard policy development. The advancement of policies that broadly support active commuting, including skateboarding, would promote both overall health in individual students and campus culture as a whole.[2,3] Active transportation would help students to meet US Centers for Disease Control and Prevention (CDC) – recommended weekly physical activity guidelines of at least 150 minutes of moderate-intensity activity, decreasing risk for heart disease and cancer, among other health problems.[4] We sought to understand the landscape of on-campus skateboarding policies at US universities in this study.

Background

College and university campuses, (subsequently referred to simply as "universities") are associated with high levels of traffic flow from all transport modes by their nature. US Census data show that the highest commuting rates of both walking and biking are found in the 16-24 year-old age range, which suggests that communities with universities are likely also to have the highest rates of AT.[5] In some places, college students prefer AT as a means

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of proximal convenience, or because it is quicker to walk or bike than it is to drive.[6] Some universities have promoted pedestrian AT commuting culture by centralizing campus buildings, reducing parking availability, and encouraging students to live close to campus. Additionally, the millennial generation views on the environment and costs of transportation could encourage AT use.[7] The continued support of AT requires the inclusion of other forms of AT besides walking and biking.

Skateboarding, a popular alternative form of active transportation among college-aged people, is not widely accepted in the general public. Skateboarding originated in California surfers finding an alternative winter-time activity and became popular in the 1970s. Its popularization coincided with public perception that skateboarding is a socially-deviant activity. Although this stigma is retained today, the diversity of possible skateboarding activities (eg, longboarding) and participant demographics suggest it ought to be reconsidered. Skateboarding is no longer only a supposedly-deviant recreational activity but a legitimate form of transportation for many Americans.[8]

Historical Background of Skateboarding

From skateboarding's early origins, there also developed a parallel perception that skateboarding is a criminal activity, related to drug use, vandalism, and violence.[9] Skateboarding has become a more profitable industry as it has become more popular and accepted in "mainstream" society.[8,10] Despite the growth of skateboarding, some residual social stigma remains.

Skateboarding was invented in California in the 1950s; sources agree that a single origin cannot be placed, but rather, it seems that the boards started appearing on beaches as an alternative to surfing in the colder months.[11,12] The first mass-produced skateboard was released in 1959, and by 1964, there were several major skateboard companies, in addition to formal skateboarding competitions.[13] The sport nearly disappeared for nearly a decade due to popularity and safety concerns, but when urethane wheels (as opposed to the early clay versions) were invented in 1973, skateboarding grew again in popularity. The skateboarding culture shifted in the late 1970s and 1980s to emphasize tricks and maneuvers, many of which required use of concrete and urban courses.[14] The 1990s saw an even heavier increase in skate culture, with professional skaters like Tony Hawk popularizing the activity.

"Skateboarding" is a broad category of activity that includes "trick skateboarding," "longboarding," and "pennyboarding," among others (Figure 1). These are typified by different board lengths.[15] Skateboards, the most well-known group, are medium-length boards commonly used for tricks and generally not optimized for travel. Longboards are longer and sturdier, and used for "cruising" and general transport. Penny boards are short and portable and also used mainly for transport. Many of the qualms about skateboarding stem from skateboard tricks and their subsequent property damage. However, commuters are likely not using skateboards at all, but rather, longboards, penny boards, or other boards designed specifically for cruising and transport.

Health Impact of an Active Lifestyle

Worldwide, rates of obesity have more than doubled since 1980. In 2014, nearly 2 billion adults and 51 million children under the age of 5 were overweight or obese.[16] Evidence supports the integration of diet, physical activity, and environment to address obesity.[17,18] Using AT can be useful for preventing chronic illnesses like cardiovascular disease, type 2 diabetes, and cancer.[19] Creating a broader culture of active living will be necessary to shape individual health. An active lifestyle is easily adopted through use of AT. Public health benefits are related to AT use, eg, a 15-minute commute to and from work/school 5 days a week can fulfill the CDC's weekly 150 hours recommendation for moderate physical activity.[4,19]

Active Transportation in the United States

The US generally has low rates of pedestrian traffic; walking-to-work rates from 1980 to 2012 declined from 5.6% to 2.8% of workers. Bicycle travel rates increased from 0.6% to 1.0% in the largest US cities from 2000 to 2008-2012; in addition, US workers who bike to work increased from 488,000 to 786,000 in this same time period.[5] Making active transport both safer and more culturally acceptable will continue to benefit nationwide health outcomes.

Figure 1
Different Skateboard Types
(From left to right: longboard, trick skateboard, pennyboard)

Some of the US's low participation in active transportation is determined by culture. A comparison between pedestrian culture in Europe and the US finds obvious differences, many of which stem from built environments. Traditionally, this has been attributed to the fact that European cities are smaller and tighter than US cities; however, a highly cited study between the 2 cultures found that 41% of driven urban trips in the US are shorter than 2 miles, well-within the range of pedestrian ability.[20] Poor pedestrian infrastructure and low costs of car ownership and maintenance have been enabling factors to low participation rates in active transportation.[20]

The built environment has a major influence on low active transportation participation. Kaplan[21] reported changing infrastructure as an effective method to facilitate higher levels of pedestrian traffic: better crosswalks, streetlights, bike paths and sidewalks. European cities insulate active transporters from vehicles with special bike lanes, street light signals, and right-of-way priorities all encour-

age active transport.[22] These cultural and structural differences result in far safer active transport; US pedestrians are 3 times as likely to be killed than pedestrians in European countries.[23]

Higher rates of AT are a result of the combined infrastructure, policy, social trends, and even weather. This multi-faceted nature makes it difficult to determine the exact impact laws and policies have on active transport.[21] Transportation policies either encourage or discourage residents from active transport, both through outright bans or incentives, but also through ease of use. The easier it is to use a source of active transportation (or the more difficult it is to use a car), the more active transport rates increase. This paper discusses how these policies are shaped by infrastructure and culture. It is important to note the reciprocal determinism of culture, and infrastructure and policy.

Study Aims

Our study seeks to understand the landscape of skateboarding policies among US universities. The implications of this analysis could illuminate institutional barriers to students achieving an active lifestyle. Generally, we hypothesized that skateboard policies differ between universities based on size and location. Our research aims were to answer the following questions: (1) What types of policies exist and which were most common? (2) What explanations exist for policies presented? (3) What enforcement procedures are communicated in these policies? (4) What patterns in policies are observed across college residential setting and size (eg, do small universities tend to have policies that are different compared to large universities)?

METHODS

Study Population and Inclusion

Overall, 360 universities were included in this study. Universities must have been listed as a 4-year university in the Carnegie Classification system.[24] Two-year and technical colleges were excluded to limit the scope of this initial inquiry and based on the expectation that more students would be commuting to campus because few of these schools have student housing.[25,26] The Carnegie Classification of Institutions of Higher Education was used to sample universities across size and residential setting. A random sample of universities (N = 30) was taken from each of the 12 size and residential setting classifications; very small (<1000 full-time students), small (<3000), medium (<10,000), and large (≥10,000) sizes in primarily nonresidential (<25% live on campus and/or <50% attend full time), primarily residential (25%-50% live on campus and >50% attend full time), and highly residential (>50% live on campus and >80% attend full time) residential settings.[27]

Data Collection

Campus skateboard policies were found using Web and university webpage searches. To assess publicly available policy data, personal follow-ups were not conducted. If a policy was found, it was placed into one of our 3 categories: Yes, anytime; Never; Yes, with restrictions. If policy was not found, we marked the school as "none found." After assigning each university policy to one of the 4 categories, we then assessed whether it had explanation and enforcement of the policy based on the language of the text provided (eg, text that stated a fine would be imposed for skating on campus).

Classification was performed by 2 researchers and verified by intraclass correlation coefficient (ICC). Although the ICC is commonly used to measure relative distance between 2 measures such as raters or open-coders (eg, 2 measurements may be systematically and consistently different, where the second measure is always 2 units higher than the first; according to ICC_C, these measures are in perfect agreement), our analysis required an absolute measure. We used absolute ICC_A because we wanted to measure exact agreement as opposed to agreement relative to the other rater.[28] ICC's – policy 71.4%, explanation of policy 75.5%, enforcement of policy 66.3% – all substantial agreement.

Categorical Analysis

Data analysis was performed using R statistical software.[29] Categorical homogeneity between school size, location, and campus skateboarding policies was determined using c^2 analysis. Fisher's Exact Test was used in cases with table cell counts less than 5.[30] Cramer's V, was used to determine the magnitude of the relationship between the categorical variables. Cramer's V is a measure of association between categorical variables in contingency tables larger than 2x2. The association V represents can

Table 1
Skateboarding Policies, Explanations, and Enforcement among US Universities

Classification of 4-year universities	% with policy	% of "Yes" policies	% of "No" policies	% with "No policy"	% with explanation of policy	% with enforcement description
Large, highly residential	(21/30) 70.0%	(17/21) 81.0%	(4/21) 19.1%	(9/30) 30.0%	(19/21) 90.5%	(4/21) 19.0%
Large, primarily residential	(28/30) 93.3%	(23/28) 82.1%	(5/28) 17.9%	(2/30) 6.7%	(26/28) 92.9%	(8/28) 28.6%
Large, primarily nonresidential	(22/30) 73.3%	(19/22) 86.4%	(3/22) 13.6%	(8/30) 26.7%	(20/22) 90.9%	(9/22) 40.9%
Medium, highly residential	(18/30) 60.0%	(17/18) 94.4%	(1/18) 5.6%	(12/30) 40.0%	(15/18) 83.3%	(5/18) 27.8%
Medium, primarily residential	(20/30) 66.7%	(17/20) 85.0%	(3/20) 15.0%	(10/30) 33.3%	(16/20) 80.0%	(6/20) 30.0%
Medium, primarily nonresidential	(6/30) 20.0%	(2/6) 33.3%	(4/6) 66.7%	(24/30) 80.0%	(3/6) 50.0%	(3/6) 50.0%
Small, highly residential	(15/30) 50.0%	(14/15) 93.3%	(1/15) 6.7%	(15/30) 50.0%	(14/15) 93.3%	(1/15) 6.7%
Small, primarily residential	(16/30) 53.3%	(13/16) 81.3%	(3/16) 18.8%	(14/30) 46.7%	(13/16) 81.2%	(2/16) 12.5%
Small, primarily nonresidential	(5/30) 16.7%	(2/5) 40.0%	(3/5) 60.0%	(25/30) 83.3%	(4/5) 80.0%	(1/5) 20.0%
Very small, highly residential	(2/30) 6.7%	(1/2) 50.0%	(1/2) 50.0%	(28/30) 93.3%0	(2/2) 100.0%	(0/2) 0.0%
Very small, primarily residential	(3/30) 10.0%	(2/3) 66.7%	(1/3) 33.3%	(27/30) 90.0%	(3/3) 100.0%	(1/3) 33.3%
Very small, primarily nonresidential	(0/30) 0.0%	------	------	(30/30) 100.0%	------	------
Total	(156/360) 43.3%	(127/156) 81.4%	(29/156) 18.6%	(204/360) 56.7%	(135/156) 86.5%	(40/156) 25.6%

be interpreted as <.10 (negligible); .10-.20 (weak); .20-.40 (moderate); .40-.60 (relatively strong); .60-.80 (strong); >.80 (very strong).[31] Qualitative content analysis was performed on text of campus policies.

Qualitative Themes

Thematic analysis was performed on policy text obtained from university websites. QSR International's Nvivo 11 qualitative analysis software was used to code and determine thematic trends in descriptions (ie, time-space restrictions), explanations, and consequences for policy violations.[32]

RESULTS

Descriptive Results

Most universities had no policy for skateboarding on campus (56.7%). Table 1 provides a detailed breakdown of policies, explanations, and enforcement among university classifications. Among universities that had a written policy, most allowed some form of skateboarding on campus (81.4%) and had an explanation for the policy (86.5%). Few universities across the board had a description of the consequences (ie, enforcement) for violating the campus skateboarding policy (25.6%).

Non-homogeneity and Association of Policies, Explanations, and Enforcement by University Classification

Analysis shows associations between policy characteristics and university characteristics, especially for policy presence by university size and residency, and enforcement details by university residency. Policy presence was relatively strongly associated

Table 2
Tests of Homogeneity, and Association of Policy Details by University Characteristic

University Characteristic	Policy presence	Explanation of policy	Enforcement details
Size	χ^2 (3, N = 360) = 100.18***, V = 0.53	χ^2 (3, N = 360) = 5.56[a], V = 0.19	χ^2 (3, N = 360) = 1.83[a], V = 0.11
Residency	χ^2 (2, N = 360) = 20.43***, V = 0.24	χ^2 (2, N = 360) = 0.70[a], V = 0.07	χ^2 (2, N = 360) = 8.96*, V = 0.24

*****p < .001, **p < .01, *p < .05, ^p < .10**

Note.
a: p-value determined using Fisher's Exact Test because of low data counts within some table cells.

with university size (V = .53). Both policy presence and enforcement details were moderately associated with university residency (V = .24 and V = .24 respectively). Table 2 presents the test and association results for policy details by university characteristics.

Policy presence was linearly related to school size, ie, larger schools were more likely to have policies (78.9%) regarding skateboarding compared to medium (48.9%), small (40.0%), or very small (5.6%) universities. Similarly, policy presence was dependent upon residency of the university in that universities in primarily residential areas were most likely have skateboarding policies (55.8%), followed by universities in highly residential areas (46.7%), and primarily non-residential areas (27.5%). University residency was related to articulated policy enforcement, where universities in non-residential areas (45.0%) were most likely to articulate enforcement, followed by universities in primarily residential areas (25.0%), and universities in highly residential areas (17.9%).

Themes Present in on-campus Skateboarding Policies

Among policies that proactively gave guidance on skateboarding behavior, most contained language prohibiting "tricks," but only one defined what this explicitly meant ("Trick or stunt riding is defined as repetitive or competitive moves where wheels leave the surface and those acts that use railings, curbs, stairs, etc"). Other policies promoted "no dangerous" skating or to "ride safely." Other policies explicitly stated that skateboarding on-campus was for transportation only. Few (N = 13) gave guidance on places where skateboarding was allowed (sidewalks being the most commonly mentioned). Most policies provided a list of places where skateboarding was prohibited. By far, the most common places stated where skateboarding was prohibited was inside campus buildings. This was followed by university residence halls. The remaining prohibited spaces included a mix of specific locations such as libraries, recreation centers, or other places specific to a particular university. The most common reason mentioned for restrictive skateboarding policies was potential for damage to university property, followed by skateboarding being described as a "dangerous activity." Other policies expressed concern for personal injury and associated liabilities. Some policies stated that skateboarding is "disruptive to the community" and "well-being of campus." Likewise, 2 policies explicitly stated that skateboarding has the potential to "create excessive noise" and is a "violation of the campus noise policy." The consequences of someone violating these policies were rarely descriptive. Most policies stated a citation would be issued. The next-most common consequence of policy violation was that the skateboard would be seized, impounded, or destroyed. Several universities described that skateboarders would be liable for damages or subject to either criminal proceedings or a student disciplinary council.

Conclusions

In this study, we sought to describe the breadth of on-campus skateboarding policies at US universities. The results indicate there being a relationship between policy existence, policy explanation, and

enforcement explanation, and university classification. The larger the university, the more likely it is to have a policy, as does being in highly residential areas; universities in non-residential areas were most likely to articulate enforcement of policies. The content of many policies suggest that universities are concerned about property damage and see skateboarding as a disruptive activity.

The relationship between university size and setting is likely a function of reciprocal causation—the urban environment leads to more skateboarding use, which to the development of policies, which leads to the shaping of skateboarding behavior, and so on. This fits with Census data that describe walking and biking commuting rates being higher in urban areas compared to others.[5]

The reason for some language within these policies remains unclear. It is certainly understandable that universities want to protect their assets and infrastructure. However, the assumption within the text of these policies is that skateboarding is most often used for doing tricks, which will lead to property destruction and community unease. For 2 reasons, it can be assumed that commuters are not "grinding rails" *en route* to their destination. First, the purpose of commuting is to travel from one place to another. Second, the types of commuting skateboards are not conducive for doing tricks. They are typically a different shape than those used for doing tricks, ie, much longer or much shorter, with a flatter "deck" (ie, platform on which the skateboarder stands).

However informative our research is, there are limitations in this study. Data were only collected about policies; we did not collect data on ridership at any of the schools. We did not talk to students or administrators, and we do not know what on-campus views of skate policies are at any of the universities. Likewise, we only captured policies at one point-in-time and assume the most current policy was available online.

Although there are several universities that actively accommodate for skateboard commuting, many actively or passively oppose it. The policies that do exist may be a barrier to students using active transportation. The implication of this is these policies, while protecting university property, also may be acting as barriers to achieving an active lifestyle, which includes exercise recommendations. For examples, policies and infrastructure that accommodates for active commuting (eg, biking) leads to increased likelihood of active commuting.[33]

Further research can explore the reasoning behind skate policies and their effect on students' active living. There are many published opinion editorials that speculate on the reasons, but there are no existing formal studies or surveys on the topic. These findings will have bearing on the health of the students and campus visitors.

IMPLICATIONS FOR HEALTH BEHAVIOR AND POLICY

Active transportation is an important method for combating the priority health issue of physical inactivity.[34,35] The conversation about active transportation is almost entirely about bicycling and walking, 2 important modes of transportation. However, a broader view on active transportation and related policies can help combat physical inactivity and related poor health outcomes. This study was successful in finding patterns between skateboarding policies at different types of universities. It is suspected these university policies shape active transportation behavior among their students.

Future research should seek confirmation of this by studying campus policies in conjunction with individual traveler data.

Policymakers, especially on university campuses, should seek a broader view of active transportation when participating in campus development. This consideration should continue supporting walking and bicycling, but also consider alternative forms of active transportation such as skateboarding or scooter riding.

Public health practitioners can work with community and university leaders to include active transportation policies that broadly promote active lifestyles and are not limited to one or 2 modes of travel.

This broadened view of active transportation should not only include a wider inclusion of transportation modes, but consideration of the communities in which these activities happen.[36]

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Human Subjects Approval Statement

No data involving human subjects were collected for this study.

Conflict of Interest Disclosure Statement

The authors declare no conflicts of interest.

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